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Architecture at the Royal Academy.

THERE is no special point of attraction in this year's collection in the Architectural Room of the Academy. Nor can one recognise in the collection the illustration of any special architectural tendency of the day; the contents of the room seem, if anything, more miscellaneous than usual. The general appearance of the room is attractive, however; the standard of work is quite up to the average, and there are a good many interesting drawings. The arrangement of the drawings has been again in the hands of Mr. Waterhouse, who has repeated his excellent and effective system of grouping, as far as possible, the works of the same exhibitor, and to some extent works of the same class also, as far as the two objects can be made compatible.

Taking the work of Academicians first, we find them less represented than usual. Three of them, Mr. Norman Shaw, Mr. Pearson, and Professor Aitchison, do not exhibit; and two others, Mr. Waterhouse and Mr. Jackson, only exhibit one drawing each. Taking them in alphabetical order, we find first, four drawings by Sir Arthur Blomfield. All of these are light pencil drawings, presumably by the architect's own hand. Two of these refer to St. Saviour's, Southwark. The "Memorial Stalls" (1,515) in that church are in pure Gothic style, of rather late character of detail, with some pretty tracery panels in front of the desk, and a backing terminating in a cove crowned with a cresting and pinnacles. The south transept (1518) is a piece of simple, solid Gothic work, to which some special interest is attached by the addition of a small elevation of the transept as it appeared in 1822. The window there looks like an Early Perpendicular one, with its tracery and cusping shorn away, and a bare expanse of blank wall below it. The restored design in the view shows the same mullions, with tracery in keeping with the date inserted between them, and the old sill transformed into a battlemented transom, through which the mullions are carried to form a wall-arcade below, with a new sill and string inserted. Whether the actual material of the old mullions in the window is retained there is nothing to show; but the restoration is a very successful bit of working up of the old lines of the architecture. The new choir schools of Magdalen College are shown in two very agreeable and unpretending pencil drawings (1524, 1530); the building is quite a perfect bit of old-fashioned collegiate Gothic, with some touches of Renaissance detail in the treatment of the doorway and the straight cornices over the windows, not returned downward as labels. The buildings group very well, though we wish there had been a plan to explain the grouping. Whether this mere reproduction of the ancient collegiate style is all one should look for in modern college buildings of course is a question that may be raised; but it will please many people, perhaps the majority, and is at all events better than anything, however "original," which clashes with the prevalent feeling of the locality.

Mr. Bodley exhibits his competition design for the same buildings, in a view showing the inside of the quad, or rather of the space partially enclosed by buildings which extend round two sides and half the third side of the site. These are also purely collegiate Gothic in the same general style. On the right there is seen what appears to be a chapel, an addition of which there is no visible hint in Sir A. Blomfield's design, and here again a plan would have added greatly to the interest of the drawing. The same architect's "Sketch for Proposed New Church at Eccleston" (1,538), is in the most conservative Gothic style possible, shown in a pencil drawing in which there is no attempt at any "effect" whatever, not even of surface texture, nothing but pencil lines and a few shadows. It would be impossible to find a fault with the design except that it might just as well be a sketch of an ancient church, and it is rather curious to see under the same name the "Church for the Society of St. John the Evangelist, Cowley St. John, Oxford" (1,545), a small pen-line drawing by apparently a different hand, and showing a much more modern treatment. In the foreground is a short sturdy square tower, with a square projecting stair-turret breaking it not at the angle but up the centre. A certain character is given by this incident.

Mr. Jackson's drawing of the interior of Radley College Chapel is reproduced among the illustrations in the present number, to which we may refer the reader. As will be seen, it is a design mainly in Late Gothic style, but with various original touches in detail; in fact, though Gothic, it would be impossible, even in a drawing, to take it for ancient Gothic. The unity of character, however, in the whole treatment and detail is noticeable.

Mr. Waterhouse exhibits a large water-colour drawing in his well-known and powerful style of colouring, of the "Prudential Assurance Buildings, Nottingham" (1,714), to which a small plan is appended as a key to the architectural treatment. Mr. Waterhouse has done so many buildings showing special treatment of a triangular corner site that one may imagine that he seeks out such opportunities of developing one of his favourite effects, the strong accentuation of the angle. Here there is a powerful mass of building carried up into a tower at the angle, with angle turrets and a conical leaded roof at the top; in the lower portion the face of this is enriched with pilasters and ornament accentuating the entrance and the windows immediately over it. The building is a terra-cotta one, we presume, from the appearance given to it in the drawing, and exhibits a good deal of the variety and ingenuity which its architect shows in inventing new detail for this kind of work.

The central drawing on the south wall is the large and finely-executed water-colour drawing of the entrance to the hall of the Chartered Accountants' building (1,638) by Mr. Belcher. The building is shown in rather sharp perspective, one result of which is to show that the cornice coming almost immediately over the attached columns, with no frieze intervening, is too heavy for the columns and rather crushes them. It might be said that the entablature would be still heavier if the frieze were not omitted; but the fact seems to be (and it is worth noting) that the employment of the full orthodox entablature tends to keep the cornice, to the eye, in its proper place, separating it from the columns; and the arrangement as it stands does not appear so satisfactory as it did in the elevation exhibited on a former occasion.* To our thinking, also, the columns flanking the entrance doorway look

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rather light in comparison with the very heavy rusticated work which backs them. This may result from the special point of view, or it may be that the draughtsman has unconsciously exaggerated the rustications in the desire to give a powerful effect; but there seems, in this drawing, a little fining down wanted in what is nevertheless one of the most remarkable and original modern London buildings. Beneath it is hung a large monochrome perspective in Indian ink of the same architect's remarkable design for the completion of South Kensington Museum. This drawing is a little flashy in execution and effect; heavy rain-clouds and a wet foreground with "reflections," give a certain sensational effect which the design did not require to show it off; it is a fine and impressive design anyhow; and the details in the drawing do not bear inspection very well, though the general effect is certainly very powerful. In the centre of the west wall hang two large drawings by Mr. H. Wilson, the geometrical elevation and a large water-colour view of an intended reredos for Holy Trinity Church, Chelsea (1,692-3). The elevation is hung too high to be well seen, and in the perspective the detail is not very much made out. The main design is square in outline with a raised centre, and finishes in a forest of pinnacles and statues; in the centre portion is a painting bordered by a heavy moulding which breaks at the upper side and runs up to form the frame to a vertical painting over it, the whole taking the shape of an inverted T. The effect of this is not very good; it seems to weaken the centre constructionally; we should have preferred the panels to be separately designed. The perspective drawing is a most effective though evidently rapid one, executed with that mastery of the brush which characterises Mr. Wilson's drawings, and is perhaps the most striking thing in the room. But after all, is it not rather a questionable thing to erect so large a reredos in front of and hiding the greater part of an unusually large and elaborate east window? We do not know, of course, what data Mr. Wilson may have in regard to the late Mr. Sedding's intentions, but we should hardly have supposed he would have designed so large an east window with any intention to shut out the greater part of it from view afterwards by a reredos. It is the same mistake that has been made at St. Paul's, where the reredos practically shuts out the east end of the church. In Mr. Wilson's reredos there is a certain amount of open work which would allow of the existence of a window behind being evident; but the design of the window would be lost, and in addition to that the reredos itself, seen against the light of the window, will be very much lost as far as much of its detail is concerned; it will be a silhouette against the light; so that on the whole we think this very bold and striking design rather needs re-consideration. Near this is hung the same artist's design for a reredos for the private chapel at Douglas Castle, Lanarkshire (1,699). This is a coloured elevation of what is apparently an alabaster reredos, the upper part bracketted out at each side from a smaller panelled base, the whole resting on a plain square slab which forms the altar. A portion of the surface is treated in flat carved square panels in a style which Mr. Wilson has rather made his own; these are iridescent with colour, beautifully touched on the drawing, which however does not indicate very clearly how the colour is to be produced or applied, whether by surface colouring or introduction of coloured materials. The drawing, at all events, is one of the most effective in the room. In a constructional sense, the lower portion, the supporting portion, looks rather inadequate for the heavy superstructure—in the sense of constructional design we mean, of course; the base seems somewhat crushed under the large square mass above it.

As these drawings have led us towards decorative work, we may notice in the same connexion one or two of the larger decorative drawings in the room. Mr. Gwatkin's "Design for a Frieze" (1,570), a very large drawing in an effective architectural frame (designed we believe by Mr. Pite) is an unusual work, consisting of scrolls of foliage with broad leaves, treated in a rather realistic style—not the firm-lined scroll of architecture, and with very little positive colour. We cannot help thinking it looks a little too soft and spongy in effect, but it is a striking piece of decorative work nevertheless, and may be regarded with interest as a certain novelty in the use of floral forms in decoration. Mr. G. C. Horsley exhibits a design for a semi-circular corridor ceiling (1,671), drawn geometrically as seen looking upwards, which we confess rather gives us a shock. Has it come to this? A trellis in white, with blue inter-spaces, which must suggest sky seen between, if not positively intended to do so, and in the interstices of the trellis are twined somewhat naturalistic flowers. Stretching across the centre is a painted panel, and in the middle of the side portions smaller square paintings which hang in the middle of the trellis, at least they are only kept in their place by rather inadequate bands which connect them with the centre panel and with a similar band forming the border to the trellis surface. Strangest of all, these smaller panels are treated as interiors in perspective lines. So that the result is, we look up from the corridor to see over our heads a semi-circular trellis with sky between, and leaves twining about it, and at two points in said trellis we look into a box, painted in upward perspective, with a figure in it. Mr. Horsley is always original and interesting—and there is evidence in this very exhibition that decorative ceilings may be designed on the most correct principles and be quite uninteresting—but when we think of his really admirable design for a dome decoration last year, so completely conventionalised and architectural in treatment, we do feel a little scandalised at this escapade. We hope Mr. Horsley will abandon this course, and return to the virtuous paths of conventionality in the future.

A coloured restoration of a ceiling at old Carrington House, by Mr. J. D. Crace (1,660), is a very pretty and interesting bit of work, with a centre lightly treated with wreaths, and a series of square panels with coloured emblematic devices round the margin of the ceiling. Mr. Clement Heaton's drawing of Decoration at the Imperial Institute (1,666) shows a frieze of borders, with escutcheons and the British arms, &c., which is, of course, adequately done, but not very interesting. Mr. Randall's "Portion of a Banqueting-hall" (1,670) shows a marble centre fire-place and decorations, an arch over the fire-place with figures in the spandrels, at the sides a heavy wooden dado effectively treated, with small carved figures introduced at intervals. The space above this is filled with paintings; the general effect is rich, but we do not like the architectural details of the marble work. Mr. John S. Babb's "Pros Olympon" (1,571) is a frieze in the style of one or two others which he has exhibited; a procession of figures in cream tint on a full red ground; in this example he has introduced a new treatment in giving the figures, which are supposed to be in flight, not walking, a slope forward in the direction in which they are supposed to be proceeding; this gives movement to the procession besides introducing a variation of line in the decoration. In the centre of the south wall is hung another important piece of decorative work of a very different class, a cartoon for an altar piece by Mr. G. Woolliscroft Rhead (1,639). This is treated in a very effective manner; the colour is all concentrated in the upper part in an assemblage of angels, treated in a purely conventional and decorative manner, around the head of the cross; at the foot are the bowed figures of the three Maries, in shadowy and colourless, and the bare stem of the cross goes up the centre of the picture across a background of twilight clouds and a dark horizon. This is a very effective and thoughtful work.

A large sheet of five drawings of the Victoria Institute, Worcester (1,575), by Messrs. Simpson & Allen, hangs in the centre line of the east wall, and may be taken, we think, to owe its position a good deal to the beautiful drawing of a well-known draughtsman whose hand is evident in it. The entrance, with the mass of decorative heraldic carving over the doorway, is effective, but the other drawings show what we should call piecemeal architecture; one part seems to have no relation to another; the whole wants pulling together and bringing under the control of one dominating idea. A plan might have given some excuse for or explanation of the accidental character of the design. But however one may desire truthfulness in external treatment of architecture, we cannot quite think that breaking up a building into a number of unconnected bits, and planting windows about here and there as if by accident, is really architectural "design." The beautiful execution of the drawings puts rather at a disadvantage the perspective view of the design for recasting the front block of the National Gallery (1,574), by Mr. Statham, which hangs immediately over it; on the other hand the author might reply, in the words of Touchstone, "A poor thing, but mine own." Certainly we do not think the habit of rushing to a particular draughtsman whose manipulation is supposed to be enough in itself to secure the admission of a drawing, is at all an admirable one. As to the design in question we of course can say nothing here, except to mention the the composition of the centre block has been altered (it is to be hoped improved) since the first sketch was published in the New Year's number of this Journal, by lowering the drum of the dome. The author's ideas as to the treatment suggested, especially in regard to the plan, were fully set forth in the article which accompanied the publication of the first sketch in the *Builder*.

Mr. Waterhouse's scheme of grouping drawings has brought together a brilliant little Scotch group on one part of the wall, where Mr. Blanc's large and fine water-colour drawing of "St. Cuthbert's Church, Edinburgh" (1,726) is flanked on one side by Messrs. Simon & Tweedie's competitive design for the Congregational church at Heaton Moor (1,718), and on the other side by Messrs. J. Burnet, Son, & Campbell's "Proposed Pathological Buildings, Western Infirmary, Glasgow" (1,730). Mr. Blanc's Classic church is shown in a view from the north-east, showing the apse with its two flanking towers near the foreground: at the other extremity of the building is an octagonal spire rising from a square pedimented stage at the top of the tower; the spire, lighted by oval lights half way up, and evidently designed more or less under the influence of Wren, is a good example of the application of this feature in Classic architecture. The towers or turrets flanking the apse have lanterns which are picturesquely treated with short heavily rusticated colonnettes; the apse is covered with lead laid so as to form panels. The pilasters on the exterior of the apse seem to us rather too widely spaced, leaving an almost exactly square wall space between them and the plinth and entablature, which has a rather bald appearance. But in the main this is a fine example of the application of the English Renaissance style to a modern church. The two other designs just referred to we must speak of on another occasion.

At one of the oblique angle-walls of the room another grouping has been made in the shape of a small collection of church designs of marked type; a finely-drawn pen-line interior of Mr. Aston Webb's Church of St. George, Worcester (1,554), an exterior of Mr. Fellowes Prynne's remarkable and picturesque church at West Dulwich (1,558), and two geometrical elevations of the Church

of the Good Shepherd at Gospel Oak, by Messrs. James Brooks & Son (1555-6). These illustrate in a rather interesting manner various tendencies in church design. Four works by Mr. Basil Champneys make a collective group on another part of the wall. Mr. Mountford is well represented by a drawing of the entrance and tower of the Northampton Institute, Clerkenwell; the treatment of the upper portion of this tower is unusual and picturesque. To these and other drawings we will return. We regret to see hung on the line the drawing of the proposed centre entrance between the new buildings into the quadrangle of University College. It has been conclusively shown in these columns that this view, made no doubt by a very able draughtsman, is absolutely deceptive, and that no such opening is possible according to the manner in which the present new wing has already been commenced; the view is the result of what at the least must be called an extraordinary architectural blunder, and it is rather too bad that under those circumstances it should figure in the architectural room to keep up the deception.

Referring just now to some geometrical drawings of a church, we may add our usual regret that there are not more geometrical drawings and plans and fewer pictures. And we fear one reason for this is that geometrical drawings are not in favour with hanging committees, as being less attractive. We know of one admirable one at all events, which passed through our hands for delivery to the Academy, the rejection of which we cannot understand except on the supposition that geometrical drawings are not favoured unless sent under important names. The Academy should encourage geometrical drawings of architecture for exhibition, as representing the real facts and construction of the design. Probably the architect members would do so; but they are in the minority. Painters have little interest in architectural drawings properly so called; and it must be confessed that the public, for whom the Academy caters, have still less.

NOTES.

WHEN the public interest is aroused in regard to the successor to Sir Frederick Burton, as Director of the National Gallery, it is opportune to inquire whether the rule of the Civil Service by which retirement is compulsory at a specified age should be applicable to such posts as those of Director of the National Gallery and of Director and Keeper of the National Portrait Gallery. A rule which may be well applicable to ordinary departments of the State is not necessarily fitted to posts such as the above, for which special qualifications are required. In the Colonial or any other office the younger officials are perfectly fitted to step into the places of their seniors, and exceptional ability will not do work better than plodding carefulness. But when it comes to a question of a judgment in art wholly different considerations arise. On the other hand, it is certainly true that after a man has been in a particular office for a long time, and is practically irremovable, he often becomes crotchety or idle, and therefore it may be that the loss of one kind of special quality is counterbalanced by a more general and continuous efficiency. At the same time, the question requires consideration, and we are inclined to think that while retirement from these posts should be compulsory at a certain age, there should be a power to grant an extension of service from year to year to any age in the case of persons of exceptional judgment and experience.

THE plan on which the London County Council are laying out their Boundary-street improvement scheme at Bethnal Green may promise very well in a picturesque sense, but we fear it is open to grave objections in a practical sense. There is to be a circular public garden in the centre of the site (the general shape of which is approximately square) and from this streets radiate to the boundaries of the land. As a matter of pleasant effect, there will no doubt be a "point" in the manner in which the garden and its possible trees will be visible as a terminating point down a number of streets; but as a manner of laying out a building plot it is both inconvenient and unhealthy—inconvenient, because the ground is necessarily cut up into very awkward shapes for covering with buildings, and will necessitate some of the buildings being cramped into angles and their rooms not being laid out at right-angles; and insanitary, because it is impossible on a site thus planned to lay out all houses with the best position for sunlight in the rooms, which is one of the greatest requisites for health and comfort in a house. It is the old fallacy of the radiating plan for prisons and asylums, long ago exploded, and now here revived in another form. If some of the radiating blocks are in a good position for getting sunlight into the living rooms, it follows necessarily that others cannot be. The proper way to treat such a site would have been to make a garden right across the centre of it, and arrange the houses in parallel blocks at right-angles to the garden, arranging garden and houses on such an orientation that the lines of houses would all get the best aspect for sunlight. The plan as proposed, and which we fear has gone too far to be reconsidered, is one of those which look very well and symmetrical on paper, but cannot possibly be practically satisfactory in execution; and we can only hope that the County Council will not misuse the opportunities which any other fairly rectangular site may afford them, by laying it out on this radiating plan, the benefits of which are almost entirely illusory.

THE "James Forrest" lecture on the "Relation of Mathematics to Engineering" which was delivered last night at the Institute of Civil Engineers by Dr. Hopkinson, must have revived to a large extent the early enthusiasm of a considerable number of those present whose daily avocations are so calculated to render latent their noblest aspirations. As the lecturer truly remarked, there are engineers who regard their profession as a mere means of making money, To such as these it can only be said that a knowledge of men is of far more use than an intimate acquaintance with mathematical formulæ, and the analytical treatment of a problem, be it never so difficult, is of small value compared with the ability to favourably impress a Parliamentary committee. Others, again, it is pointed out, rejoice in their profession because it benefits the race, while others delight in it for its own sake. This, of course, is all quite true, but how few are in a position that will allow them to enjoy the soothing influence of a differential equation in their busy every-day life. A sound knowledge of mathematics is of the greatest value to an engineer—it is, in fact, indispensable—but, at the same time, unless this knowledge is kept most carefully balanced while it is being acquired, it only tends to prevent the possessor making himself useful in the profession. As a general rule, a man with a great knowledge of mathematics is of very little use in an engineer's office; and at the present day one must choose whether one will be a mathematician with a knowledge of engineering, or an engineer with a knowledge of mathematics.

THE case of Nind *v.* the Nineteenth Century Building Society, which was decided by the Court of Appeal on Tuesday last, appears to involve a practical hardship. It was an action by a lessor to recover a sum of money in respect of surveyor's charges and solicitor's costs incurred in surveying certain property and preparing notices to repair. The defendant society was underlessee of the property, and the question arose whether a lessor could recover such expenses from an under-lessee. There is no question that a lessor can do so against his lessee, for the second section of the Conveyancing and Law of Property Act, 1892, states that "a lessor shall be entitled to recover as a debt due to him from a lessee. . . . all reasonable costs and expenses properly incurred by the lessor in the employment of a solicitor and surveyor or valuer, or otherwise, in reference to any breach giving a right of re-entry or forfeiture." The Court of Appeal, reversing the decision of the Divisional Court, held that this section applies only to a lessee, and not to an under-lessee. We shall not refer to the judgment in detail, since it deals with minute legal technicalities, but it is the decision of a strong Court, and may be fairly accepted as being correct. This, however, does not prevent the decision from pressing hardly on lessors, and it will doubtless lead to a statutory amendment of the law on the subject.

THE Imperial Houses of Parliament at Berlin, which we illustrated in our New Year's number, are now nearing their completion, and, in fact, the Emperor has practically ordered that they are to be ready for the reception of members by October next. Of course, a good deal of the sculptural decoration and nearly the whole of the frescoes will still be unfinished, but the building will have to be habitable by the time named. The new cathedral has been commenced in accordance with Professor Raschdorff's design. The foundations are being laid on a site generally considered unsuitable for such a building. The Emperor is responsible for the selection of both the site, the design, and the architect. Prussia pays for the building and its representatives grumble at the expenditure. The new National Monument to which we have occasionally referred is to be commenced immediately, the first vote on account having now been passed by the German Parliament. Of the schemes which are now very near their realisation we must note the development of the "Museum Island," where a commencement is to be made with a new "Renaissance Museum." The new Town Hall will probably also now soon be commenced. Of schemes practically only on paper for the present we note one for the new combined National Library, Royal Academy, and Royal Institution on the "Unter den Linden" thoroughfare, a combined permanent Exhibition Building and Oratorio Concert-hall on the site of the present exhibition buildings at the Lehrter Station, and the new Royal Academy Schools in a suburb. The scheme for a new Opera-house has apparently now been definitely postponed for a number of years. Of the essentially utilitarian public buildings in hand, we note the extension of the Imperial Bank, the new Post-office Ministry, the State Insurance Office, and, further, the recent completion of a "Public Wholesale Market." There are some twenty other larger works in hand, though not of such general interest, and to these we must add a formidable list of churches (about fifteen), headed by the memorial churches to Emperor William and Emperor Frederick.

IN the new issue of the German Archæological Jahrbuch (1894, ix. 1) the whole of the plates and the greater portion of the text is devoted to the publication and discussion of the fragments of sculpture from the basis of the famous Nemesis at Rhamnus. A few of the more important fragments were published provisionally two years ago in the Ἐφήμερις, but we have now, for the first time, the whole number, forty in all, and accompanying a sketch of a conjectural restoration of the composition. Herr Ludwig Pallat, who discusses the sculptures, thinks that the description of Pausanias (I. 33, 7 and 8) was based on inscriptions, and that hence the attribution of the single figures is certain, the only questions remaining being the fitting of the fragments to the persons named and the arrangement of the

composition. The scene represented, it will be remembered, was Helen being led by her foster-mother, Leda, to her real divine mother Nemesis—present were Tyndareus and his sons, and a man with a horse near him, also Agamemnon, Menelaus, and Pyrrhus, son of Achilles; further a problematic figure called Epochos, and another youth. The nine central figures Herr Pallat arranges with a high measure of probability, and relying chiefly on analogous compositions of approximate date. The group was attributed by Pausanias to Pheidias, and such appears to have been the popular tradition. On the other hand, Antigonos of Karystos expressly states that Agoracritos affixed an inscription to the statue on a little tablet stating that he himself was the sculptor. As no certain wo k of Agoracritos remains, the question of attribution is a difficult one. Herr Pallat, after a long and detailed discussion, decides for Agoracritos. In the "Anzeiger" of the same number is a long, fully-illustrated paper on the Sidon sarcophagi, which will be the subject of a public lecture this week at Oxford by Professor Gardner—the first, we believe, that has been given on the subject in England.

THE annual report of the Vienna "Oesterreichschen Ingenieur und Architekten Verein" speaks well for the energetic way in which this society performs its duties. Besides twenty-two general and ten business meetings, there were some 50 sectional and 150 committee meetings in the year. Besides the standing committee there were no less than 16 committees at work on different special subjects, such as the classification of cements, iron and steel, the construction of vaults, the development of Vienna, its water-supply, taxation, &c., and farther on competition conditions and professional etiquette. 10,000 florins (or 830*l.*) were spent on the printing of reports by these special committees, and as this is a great drain on the society's resources it has been found necessary to petition the Government for a subsidy to meet this kind of expense, as it is to a great extent the public officials who profit most from the result of the special committee's labours. We observe, however, a remarkable preponderance of engineering subjects among the list of papers read during the session, which seems as if the architects were hardly getting their fair share of attention.

A COMMITTEE has been formed to collect 500*l.* for restoring the ancient flint and stone tower—one of the oldest in the county—of St. Nicholas Church, Deptford. The nave, aisles, and chancel were rebuilt, of red brick, in 1697-8, as Evelyn records in his Diary (August, 1699): "At Deptford they had been building a pretty new church"—and have been repaired and enlarged since. Whilst living at Sayes-court, which he acquired in right of his wife Mary, daughter and heiress of Sir Richard Browne, Evelyn lost two sons (1658), whom he buried in this church. Here are monuments of the Browne family, of Fenton (1603), who accompanied Frobisher on his second and third voyages, and commanded the *Admiral* when the Armada sailed up the English Channel, and of George Shelvocke (1742), the circumnavigator. Sayes Court, so named from the Says who held the manor from 1191 until 1402, when it passed to Sir William Clinton, was pulled down in 1728; a workhouse was afterwards built on its site. A portion, about one acre and a-half, of the site of the garden wherein the Czar is reputed to have disported himself in strange fashion whilst at Deptford in 1698, has been vested in trustees, and its maintenance provided for, by Mr. W. J. Evelyn; and having been laid out by the Kyrle Society and the Metropolitan Public Gardens Association, was opened eight years ago for the public enjoyment. It is perhaps worth noticing that Sir Richard Browne, who died at Sayes Court, was somewhat in advance of his time, for he expressly enjoined that, for sanitary reasons, he should be buried outside the church, under the chancel south-east window.* He had been our Minister to France, and gave the Trinity Corporation the land at Deptford on which they built the almshouses for seamen's widows.

IN the front of Messrs. Erard's new building in Great Marlborough-street, just completed from the designs of Mr. Percy Stone, there have been inserted a series of medallion heads in bronze, modelled by Miss Ruth Canton, whose work will be familiar to those of our readers who have been accustomed to take note of the contents of the Sculpture Room at the Royal Academy Exhibitions. High up on the building are the portraits of the two Erards, Pierre and Sebastian, and lower down (and therefore finished in a different manner, as being near the eye) are, on the left of the doorway, Beethoven, flanked on the left by Liszt and on the right by Thalberg (neither Beethoven nor Liszt would have enjoyed that, but we presume Thalberg was one of the players who preferred an Erard to any other piano), and on the right of the doorway is the bust of Mozart, with Spontini on the left and Schubert on the right. This also is rather an oddly-assorted trio, but that does not affect the sculpture, and we presume the choice was not the sculptor's. Miss Canton, we understand, went through a special course of study in this class of work two or three years ago, under the late M. Chapu; a better school could not be to study in, and her work does credit to her teaching. The medallions are executed in a golden-coloured bronze which harmonises very well with the colour of the brickwork. Over the doorway will presently be placed a group of Orpheus charming the beasts (not, we presume, with an Erard piano). The introduction of bronze sculpture in the front of a building, and in reference to the purpose of the building, is a precedent which we hope may be followed further. Sculptors, many of them, would be only too glad to have such opportunities oftener, and street architecture certainly benefits by such additions.

THE NEW GALLERY EXHIBITION.

IT cannot be said that the New Gallery Exhibition is a very remarkable one; in fact, it is the poorest we have seen among the Spring exhibitions at this Gallery. Putting aside a few fine works, the bulk of the paintings are uninteresting, not so much from lack of interest in the subjects chosen—for it is a special tendency of exhibitors at the New Gallery to seek for subjects of rather out-of-the-way interest—as for the tame and ineffective manner in which many of them are treated. There is a want of robustness, an air of sentimentality of a rather weak kind, pervading the collection; and a good many exhibitors seem to be palpably trying experiments.

For the first time, we may observe, the traditional order of numbering has been broken through, and the numbers commence in the small south room instead of, as usual, in the west room. None of the important pictures of the year are here, however, we still go for these to the two large galleries. Mr. Alma Tadema's one contribution is an interior entitled "The Benediction" (163), a narrow upright painting which cuts a strip out of the interior of a Roman temple, where a priestess on the top of a flight of gilded steps holds two torches aloft; great part of the space is occupied by the "risers" of the steps; the half lengths of two girls coming away appear in the foreground, and the heads of others of the dismissed worshippers are seen in the rear, above the platform on which the priestess stands. The architecture, like the title of the picture, seems a curious mingling of Pagan and Christian associations, for a portion of an arch cuts across the top of the picture, and below is seen a portion of the perspective curve of an apse beyond it, as if it were a basilica, though the general feeling of the subject is frankly Pagan. The gilded staircase, and the roses strewed on it, and just showing above the edges of the steps, are splendidly painted, each flower being separately finished.

Mr. Watts's "Greek Idyll" (76) is not very Greek, it represents two or three seated nude figures grouped in a harmonious progression of lines and painted in warm, golden tones, with an assemblage of infants apparently all of the same age lying at their feet. In spite of the fine colour there is something that provokes a smile in it—a smile which the artist did not intend to raise. Sir E. Burne-Jones exhibits a repetition in oil (106) of his watercolour picture of "Love Among the Ruins" which was irreparably damaged by an accident; the oil-painting is richer and more powerful in effect than the original, but the picture, as we have already observed, is no representation of Browning's poem from which it takes its name. On the whole Sir E. Burne-Jones's best contribution is his beautiful and *spirituel* portrait of Miss Amy Gaskell (155), who indeed is made to look more like an ideal personage than a real lady of to-day. A small replica of the "Danaë" (164) is another of the painter's contributions, and an ideal figure entitled "Vespertina Quies" (136), which does not interest us very much. Mr. Waterhouse's "Ophelia" (173) is a rather curious kind of experiment in a flat, half-decorative manner suggesting a design for tapestry, the profile figure seeming scarcely relieved from the pond landscape in the background; the conception of Ophelia is good, the work is a fine and unusual piece of colour. We have not noted any other figure pictures (apart from portrait) of any special success; Mr. Boughton's "Evangeline" (238) is pretty and characteristic. We cannot profess to understand what Mr. F. Brangwyn is driving at in his large and eccentric painting of "The Miraculous Draught of Fishes" (246). Mr. Nettleship's stalking lion, under the title of "Stealthy Fate" (237), is an animal-painting in his best style.

Among portraits, which are generally strong at the New Gallery, Professor Herkomer has one in a striking *bravura* manner (180), hung in the place occupied last year by Mr. Sargent's portrait of the lady in rose-coloured raiment, and perhaps intended as a kind of challenge to it; we hardly think successfully; but (like the other) it is a portrait every one must look at. The lady, who stands at full length (perhaps rather more, for the proportions of the figure seem abnormally tall), is clad in a boldly designed dress in which yellow is the predominating colour, and is relieved against a mass of crimson curtain. The whole effect is undoubtedly striking, but rather wanting in repose for a portrait. Mr. Shannon's portrait of Mrs. Charlesworth (207) in white dress is much more to our liking; that of Miss Jones, the head-mistress of the Notting Hill High School, (105) is also a very admirable and dignified portrait in more sober but effective and harmonious colouring; in both these, while the pictorial effect is good, the personality of the sitter is the chief interest; in Professor Herkomer's work we seem to think of the sitter only as the excuse for the painting of strongly-coloured textiles. "Mrs. Charles Niven" (183) by Mr. C. W. Mitchell, is a very pleasing portrait picture, noteworthy for the effective and harmonious treatment of the colours of the costume and accessories. One of the most interesting and successful portraits in the Gallery is Mr. Watts's half length of the author of "Diana of the Cross-roads" (111), one of that type of portraits of which this artist has done so many, which are remarkable not for colour, effect, and accessories, but for the earnest study of character in the face.

The exhibition contains several fine landscapes. Mr. Alfred East's "Morning Sun" (181) is a large landscape showing a very careful and successful study of the effect of early morning light, and is one of the best landscapes he has yet produced, though it is surpassed by one in the Royal Academy which will be noticed in due course. Mr. Adrian Stokes, who has unfortunately not been able to finish anything for the Academy, sends two pictures, of which "Dawn" (184), is in his best style, but is not a work of the first importance as compared with others by the same painter which have been exhibited here. The large picture by Mr. Alfred Parsons, "A Lonely Farm" (210), is a very fine landscape, unusual both in composition, colour, and feeling, and is one of the best works in the gallery. There are various good landscapes on a smaller scale and signed by good names but not of very special interest, with the exception of two in the south room, "Late Autumn Afternoon, Whitby" (32), by Mr. W. Llewellyn, and "Sleeping Waters, St. Ives Bay" (36), by Mr. Moffat Lindner; this latter is a night picture. Both are of interest as successful treatment of special effects in nature.

* As Compton, Bishop of London, used to say, "The churchyard for the dead, the church for the living."

Among the sculpture exhibits in the hall, not very numerous, is the late Miss Henrietta Montalba's "Venetian Fisher Boy" (418), which was seen at the Academy last year. The prominent works are Mr. Frampton's "Caprice," and Mr. Lucchesi's "Oblivion," both of which, if we mistake not, have been exhibited at the Academy. Mr. E. Roscoe Mullins has a very pretty little plaster group "The Rising of the Dawn" (429), and Mr. Pomeroy sends a group of three small bas-relief panels (435) of abstract subjects, which are worth attention. Included among the sculpture subjects is a very pretty and fanciful brass lamp-holder by Miss Esther M. Moore, a design combined with figures, and treated with a true sense of the special capabilities of metal.

Among various smaller works in the balcony we may notice a pretty fancy by Mr. Walter Crane, "In the Clouds" (255), and a rather important study for a decorative representation of the Holy Family, by Mr. E. Fellowes Prynne, treated according to an elaborate scheme of symbolism, of which the author has sent us a description or key, which however we have not space to follow here.

LETTER FROM PARIS.

THE opening of the two great Salons (of which more on another occasion) has naturally distracted attention from the smaller exhibitions of which there has been a constant succession for some months past. Among these, a word of special mention is due to the exhibition of M. Eugène Grasset, who has a well-earned reputation as an illustrator. The interest of his exhibition resides partly in its great variety. Watercolours, pictures, cartoons for glass, advertisement posters, book illustrations, designs for embroidery, church ornaments, enamels, ironwork, mosaic, even architectural designs—M. Grasset can do something with all, and the 300 exhibits in his collection show a richness of imagination and an extent of technical knowledge really remarkable.

M. Steinlen, who is also an illustrative artist, has collected in the Galerie du Théâtre d'Application a number of sketches and studies of Parisian street life of the lowest grade, delineated with an almost pathetic truth. One cannot refuse to M. Steinlen the praise of great truthfulness of observation, but this realistic representation of the worst side of modern life is not very attractive.

It is a long step from there to the mystical compositions with which the "Salon de la Rose Croix" has opened what is called in the catalogue its "troisième geste esthetique." The exhibition aims, according to its founder, at restoring "the cult of the ideal, with tradition for its basis and beauty as its means." On this principle, there is a rigid exclusion of historical painting, military or patriotic scenes, representations of contemporary life, portraiture, landscape, *genre*, Orientalism, animal painting or still life. Nothing is left to its members but allegory and legend, and therefore it is not surprising to find that the Salon de la Rose Croix includes a very limited number of works, most of which are incomprehensible to ordinary mortals. Hear and there, nevertheless, one finds some interesting works, such as the "Orpheus" of M. Deleville; the drawings by M. Knopff (evidently inspired by Burne-Jones); the "Chanson d'Amore" and the "Sainter Femmes" of M. Osbert. These, however, are works which might find a place in any exhibition, while the rest are the production of mere dreamers.

The "Artistes Independants," who have had to quit the Pavillon de la Ville (which is being transformed into a Municipal Museum), have opened their annual Salon in the Palais des Arts Libéreaux. As usual, there are a few clever works among a crowd of execrable ones. Among the redeeming works may be noticed the landscapes of M. Duval-Gozlan, whose talent becomes every year more remarkable, the portraits of M. Signac, the "Fauconnier Russ," of Cheremetew, and the views on the Seine by M. Guilloux.

To finish with this list of the smaller exhibitions, we recommend all those who are interested in the evolutions of Art to visit the exhibition of forty works of Manet in the Durand Ruel Gallery. It is a rare opportunity of seeing collected the best works of the artist who was the precursor of Impressionism twenty years ago, and whose talent and power of manipulation at all events cannot be denied. The exhibition, which includes many well-known works, serves to illustrate the fallacy of human judgment and the extent to which opinions and aims can be modified in the course of a few years.

A new artistic society has been formed with the object of purchasing from the Salons the works of young painters and sculptors and disposing of them by lot among the subscribers. M. Léon Bourgeois, a former Minister of Fine Arts, is the President, and the society includes a great many names well known in art and literature, such as Alexandre Dumas, Roll, Puvis de Chavannes, Carolus Duran, Cormon, Robert-fleury, Bartholdi, and Roty. It has taken the title of "Société Populaire des Beaux-Arts," and is expected to render great service in the encouragement of rising artists.

A great patriotic celebration in honour of Joan of Arc has just been held in Nôtre Dame, at which one of the spectacles has been the banner of the maiden warrior, restored according to historic data. It bears on its principal face a figure of Christ seated on clouds and giving his benediction to France, personified by two angels bearing fleur-de-lys. On the reverse is embroidered the scene of the annunciation, surmounted by the ancient escutcheon of France. Below this a dove, symbolising Hope, bears in its beak a scroll with the inscription "De par le Roy du Ciel." This banner, which is really a very fine work of art, has been executed after the design of M. Emile Ende, architect of the monument at Vaucouleurs, in collaboration with M. Emile Azambre, who designed the figures.

In this connexion we may mention the proposal of M. Fabre, a member of the Senate and an enthusiast about Joan of Arc, that the proposed new postage-stamp design should bear the head of that heroine in place of the symbolic head of the Republic and the commercial and industrial allegories which are at present in use in France, where an epoch cannot be characterised by the head of a reigning monarch.

An important group of scholastic buildings is shortly to be constructed in the XIth Arrondissement, the cost of which is to be defrayed by a legacy left by Mdme. Ledru Rollin. It is proposed to make this the subject of a competition in order to obtain a model building, and to extract from the architectural profession some new ideas as to the construction and planning of buildings of this class, to be utilised in future erections also. According to the programme of the competition, which has been elaborated at great length by the Archftectural Department of the Municipality, economy of construction is to be one of the decisive elements in determining the award.

The Municipality has also decided on the construction of a rope railway at Montmartre, 2,500 mètres in length, which will start from Place Cadet and terminate at Rue de Poteau, on the north side of the hill, after having traversed Rues Cadet, Rochechouart, Clignancourt, Ramey, Hermel, and Place Ste. Euphrasie. The line, including the engine, will cost about 1,500,000 francs.

Speaking of Montmartre, it may be observed that the works at the church of the Sacré Cœur have been actively renewed with the fine weather. The external arches of the windows in the drum of the central dome have been commenced, and only a few courses remain to be built before arriving at the dome itself. The total cost of this great church up to the present date has amounted to 26,633,000 fr. It has already been mentioned in an article on the church in this journal, some time back, that besides the dome, M. Abadie's design included an immense campanile behind the apse. In this tower is now to be placed the bell which the City of Moscow was to present to the Cathedral of Paris in memory of the Franco-Russian fêtes. Its enormous weight rendered it unsafe as an addition to Nôtre Dame, and for the tower of Sacré Cœur M. Raulin, the present architect, has only consented to the introduction of the bell on the condition that it shall not be swung, but only struck with a hammer.

At the Louvre, M. Guillaume has commenced the works for the the fitting up and arrangement of the long basement running parallel with the Seine under the main picture galleries, 150 mètres in length. It is to be devoted partly to engraving and the exhibition of engravings, which latter will form a kind of illustration of the History of the Louvre.

On Friday last week, at Asnières, on the Place Voltaire, took place, with little ostentation, the inauguration of the monument erected by public subscription to the late Durand Claye. The monument consists of a bronze bust on granite pedestal, and surmounted by an iron grille. M. A. Bouchier is the sculptor, and M. Trélat the architect. This inauguration, singularly enough, exactly coincided with the acceptance by Parliament of the complete principle of "tout à l'egout,' of which Durand Claye was the pioneer. The Chambers had just voted for the scheme of taking the Paris sewage to Achères, and it is to be hoped that it will soon be carried out now, and the sanitary improvement of Paris completed in this respect. The cost is estimated at 117 million francs.

The death is announced, at the age of seventy-five, of M. Isidor Victor Daunay, architect, who commenced his career as Inspector of Works at the Opéra Comique, when that building was commenced on the Place Favart in 1840. M. Daunay became subsequently engaged on buildings for the crown in connexion especially with the private property of Louis Philippe. In this quality also he co-operated in the construction of the flêche of the Sainte Chapelle. We owe to him some remarkable models of carpentry construction, now the property of the École des Beaux-Arts. Among his other works were the Château of Bonneveau des Tourelles. He was a very conscientious architect, who had amassed a great deal of learning on subjects connected with his profession.

THE ARCHITECTURAL ASSOCIATION:

MODERN HOUSE PLANNING.

THE ordinary fortnightly meeting of the members of the Architectural Association was held on the 27th ult., in the meeting-room of the Royal Institute of British Architects, 9, Conduit-street, Mr. E. W. Mountford (President) in the chair.

It was announced that a special visit had been arranged with Mr. Pearson, for Saturday, the 5th inst., to visit his new church at Maida Hill.

The President announced that the soirée would be held at the Holborn Town Hall instead of at Westminster Town Hall, on Friday, the 4th inst.

House List for 1894–5.

The House List for 1894–5 was then submitted as follows:—President, Mr. E. W. Mountford; Vice-Presidents, Messrs. A. C. Bulmer Booth and A. W. Earle; Committee, Messrs. S. B. Beale, A. Bolton, S. W. Cranfield, W. D. Caröe, A. O. Collard, F. R. Farrow, G. H. Sale, T. Moore, G. H. F. Prynne, E. A. Runtz, W. H. Seth-Smith, P. Waterhouse, E. Woodthorpe, Beresford Pite, Fleming, Huntly-Gordon, W. H. White, and H. A. Satchell; Hon. Treasurer, Mr. H. W. Pratt; Hon. Librarian, Mr. J. W. Stonhold; Hon. Secretaries, Messrs. F. T. W. Goldsmith and B. F. Fletcher; Hon. Assistant Librarians, Messrs. C. H. Freeman and E. W. M. Wonnacott; Hon. Auditors, Messrs. G. A. Lansdown and E. H. Sim; Assistant Secretary and Registrar, Mr. D. G. Driver.

The President read a letter from Mr. R. A. Briggs, expressing regret at his inability to be present through indisposition, and drawing attention to several of the plans exhibited on the screen.

Mr. F. T. W. Goldsmith (Hon. Secretary) then read the paper by Mr. Briggs on "London House Planning," which was as follows:—

When your Secretary honoured me by inviting me to read a Paper before you, and suggested that "Modern House Planning" should be the title of it, my first intention was to refuse, because I felt that I had nothing to say that would be worth saying, or of sufficient interest to you. But, remembering having listened some years ago to a paper read here by a gentleman now well-known in the first rank of the profession, and having been much impressed by several points he made and by the many "tips" his paper contained (which have since been of the greatest use to me), and after having met him, when he expressed surprise that I had been so much interested in what he had said, I bethought me that perhaps in a less degree, as I have studied deeply the question of house planning, something I may say may fall on the fallow mind of even one gentleman present, where it will, peradventure, fertilise and blossom forth and be the means of his creating something that the world has never seen before, and something that will revolutionise the whole domestic and social scheme of modern civilisation. The mouse you know was of great use to the lion, and I for the time will be the mouse.

When I began to consider what I should tell you about house planning, its difficulties, and what to plan and what to avoid, I found that it would be impossible to confine myself entirely to the plans, as the elevations, sections, details, and, indeed, the whole building, should grow in your head as you plan. Nothing should be left to chance, and, as you plan your building, you must have in your mind's eye not the lines you put on the paper, but the building itself as it will look when finished, with the lights and shadows, doors

and windows, full lights and cross lights, and, indeed, the completed building furnished and ready for occupation.

I have always found that the easiest method to start on planning a building is to draw it out, plans, elevation, sections, and perspective to a very tiny scale, such as 32 ft. to the inch, and I generally make these sketches in an ordinary architect's pocket-book, with the paper lined in squares. One can erase and alter very easily and quickly with such a small scale. Then, when I have the whole thing thought out, I begin to work out the building to 8th scale, when I, of course, put in all the details of the plan, &c.

This is only a suggestion to you by the way, but I commend the system to your notice for what it is worth, and we will now return to the subject of the paper. After the very interesting and deeply instructive paper which our learned professor—Professor Kerr—has read in another place on Town House Planning, and to which I have but little to add, I will confine my remarks to country and suburban house planning, particularly as I have had more experience in that class of house.

Let us start at the beginning.

A gentleman comes to one of us (I wish these gentlemen came more frequently) and wants us to design him a house. He has bought a plot of land which he considers admirable—beautiful views, near a station, gravel soil, water and gas laid on, and the land having a gradual slope to the south. Nothing could be better; an ideal site in every way. Well, what sort of a house does he want? what accommodation? what does he like? and last, though not least, how much will he spend? He answers these questions, and he probably impresses us with some point *he* considers most important—some crank, such a one as I remember a client once had when he came to me, and, in telling me what his requirements were, impressed upon me most seriously that he did not want any *licentious curves* about his house. Well, I did not want to give him any such wicked things; but I saw he had been reading Ruskin, which is a very good thing for all of us to do.

I never like a client to go *too* closely into the plan of the accommodation, as it is liable to hamper one, and influence one too much in looking impartially at the proper planning required. As long as a client gives me roughly the sizes of the rooms and their number, and generalises about their position, I am happy. One must, of course, "draw out" our client as to the style of the house he wants. Does he like the old Manor House style, with mullions and half-timber work, or does he want sash windows? His answer will be the "cue" to the whole building. If he likes mullion windows, tiled roofs, half-timber work, and lead lights, I know what he wants; but if, on the other hand, he says, "Oh, sash windows, of course, and good square rooms; none of your tit-bits and pokey windows and corners;" then I know my gentleman, and eighteenth century shall be his portion.

We have now a basis to go on, and we will take the house of the Manor House style first, although the general arrangements of the plan would not be affected even if we took the house with the square rooms first, as I shall presently show.

We will say our client wants a drawing-room, dining-room, library, hall, and kitchen offices on the ground floor, and about five or six bedrooms, bath-room, &c., on the first floor. We go down and see the land our friend has bought, and note on the plan of the ground the direction of the views, the falls in the ground, and the proposed position of the gardens, tennis-court, carriage-way, &c. And here I would interpolate that the public must be taught that the general arrangement of the gardens is distinctly an architect's duty. Why people should think that an architect's work stops short at the house I can never imagine. The public expect us to design the mantel-pieces, panellings, &c., in a house, and, then for no earthly reason that I can see, they wish us to hand over the finishings and furnishings of the house to some firm of decorators, and the garden, which is the setting and frame to the house, to the landscape gardener, so that he may work his sweet will in designing curlying paths and flower-beds in the shape of pears, sausages, or any other atrocity that commends itself to his "fuzzy-wuzzy" brain. However, I hope that by degrees the public will understand that it is as much the duty of an architect to arrange the gardens and furnishings as it is for a painter to choose the frame for his picture. But to return to our plan, and to what nearly every one will take our advice about, and that is the position of the house.

Where it is possible, and I have generally found it so, it is best that the entrance front, with carriage drive, should be towards the north, so as to allow the garden front to be towards the south, in which front you will have your windows to the drawing-room, and to as many of the other reception rooms as you can. I would here, however, mention that it is never advisable to place your house directly north and south. It should be "tipped up," as it were, on plan, either towards the north-east angle or towards the north-west angle, so as to allow the sun to glint, at one part of the day, on the north side. The side of a house which never sees the sun is sure to be cold, and to cause the rooms to be cold also, and cheerless. My experience is that, in the east of England, you should "tip up" your house on the north-west angle, and in the west of England on the north-east angle, and then, when possible, arrange a belt of trees in the direction of the "tip," to shelter the house from the gales, which in the east of England would come from the east in most cases, and in the west of England from the west, as these heavy gales generally come from the sea. I have often noticed this small thing, which will show that we architects must have our eyes everywhere. In the east of England the trees slope to the west, whilst in the west of England they slope to the east, showing plainly from what quarter the heavy gales come. Therefore, when you are going to build a house in a new (to you) locality, see which way the trees slope and "look out for squalls," because on that side you must arrange there shall be the fewest number of windows, and mind you see that your walls are prepared for the squalls. Well, now as to the disposition of the rooms.

We start with our entrance, porch and vestibule, and do not cramp them. There should always be a covered porch to a country-house, so that callers may be under cover whilst the servant is answering the bell, and it protects also the entrance door. There should also be a vestibule with folding doors to prevent the draught from the front door coming into the hall. In porches I have often noticed architects put seats, but I always think this is a work of supererogation, as I have never heard of callers at the present day being so tired that they could not wait till they were ushered into the house; and there are usually better positions to be found for seats for the inmates of the house. The details of the porch, vestibule, and hall should not be meagre. They are, as it were, the frontispiece to the house, and a good impression on entering a house should always be contrived. A speculative builder, whose name I daresay many of you would know if I mentioned it, who had made his pile on rather small class houses, was once asked how he had been so successful, and his reply was: "Well, yer see, I always put a Corinthian cornice in the front porterco." We do not want to copy our friend exactly, but without being snobbish, we can make our entrance look inviting. "Welcome the coming and speed the parting guest."

I always try and arrange that the hall can be used, if desired, as a room, and it is also very economical planning. And if you put it in the middle of the plan you can have nearly all your rooms opening into it and so save passages. Brillat de Savarin said: "A dinner without cheese is like a pretty woman with only one eye." Well, I think a house without a good hall is like a woman with no eyes at all. And remember that passages, except for the purpose of giving access to rooms, are all waste space. The problem therefore is to do away with as much passage space as possible. "A passage saved is a room gained," we may say. In the hall at one end you can put a bow window, and near it the fireplace, with a cosy seat, well out of the draught, and at the other end of the hall there would be the entrance and vestibule above referred to. The front door should not be far from the pantry and kitchen, so that the servant will not have far to come in answering the bell. Either in the hall, or just off of it, the principal staircase should be placed, and if possible it should be in such a position that people either going up or coming down the stairs are not in full view of the entrance door. Very effective features can be made of a staircase like this, as may be seen from the designs of many architects I could name. As a rule never cramp the size of your staircase window.

Now let us take the pantry. The pantry must be near the kitchen and also near the dining-room. And as we do not want to know directly we come into the house in the evening what we are going to have for dinner, nor to let anyone who may happen to come into the house know that the dinner we are going to have will be stewed steak and onions, the kitchen must be shut off by a lobby. What easier thing then than to make this lobby into a serving lobby, with a sliding hatch and double doors? This therefore means that the dining-room must be next this lobby, and thus we get the position of the dining-room. Again, as most people think of themselves first, and as we have not got so far in England as to put our servants in better positions than ourselves, what more natural thing that we should put the dining-room towards the south and the pantry, and, if necessary, the kitchen towards the north?

Now then about the kitchen offices, and I fancy some one says, "But you have said nothing about the drawing-room and library?" Quite true, my friend, I haven't. But if you are designing a house for a gentleman, and that gentleman has a wife, who is a housewife, woe betide the architect who has not arranged the kitchen offices properly! I remember once designing a house for a lady and taking the sketches to her, and before she had even seen the plans she said, "Where have you put the housemaid's closet?" Luckily I had not forgotten it, and had put it in a proper position, but believe me these little (apparently) matters are the soul of a good plan. In the kitchen, consider seriously this point, the position of the range, so that it (1) shall have a good light on it, that the cook can see into her pots and pans, and (2) that it shall be so placed that the smells can be taken up into a ventilator and not wafted through the serving-lobby into the house. A serving-lobby will prevent a part of the smells coming into the house, but care should be taken to prevent them getting even into the serving-lobby. My experience is that the best place for the range is opposite the door leading to the serving-lobby. The scullery will, of course, be immediately next the kitchen with direct communication. Then north of the scullery you will place your larder. The position of the larder is important. It *must* face the north. As Napoleon's answer, during his Russian campaign, to his officers when they were continually questioning him, was always the same—"North," so you, in your planning campaigns, must remember—"*larders north.*" Some architects put their larders with communication from the kitchen, but I think the communication is much better from the scullery. Kitchens get hot, and hot air coming through into the larder is not a good thing for the food placed there. Larders should have lots of ventilation, and I fancy the mistake nowadays is that architects make the windows too small. I think a larder window should never be smaller than 3 ft. by 1 ft. 6 in., and it should have a sheet of perforated zinc instead of glass. Directly out of the scullery, or immediately next it, the coal-cellar and servants' water-closet should be placed. I think the best arrangement for access to these is to have a covered way. You can, of course, let them open into the scullery, but I think it is better they should have their entrances into the kitchen yard or court. It is a much cleaner and sweeter arrangement. To your scullery you will probably have your tradesmen's entrance; arrange this so that the tradesmen need not pass the servants' water-closet. As to wine-cellars, I fear they do not receive the attention they deserve. People do not, I fancy, "lay down" wine as their grandfathers used to, or else they arrange that their wine merchants keep it for them. Anyhow, my experience has been that only quite small wine-cellars are required, and in most cases they have been kept for economical reasons (generally to save the expense of excavation) on the ground-floor. This is not a bad arrangement if you put hollow walls all round them, and the iron bins you can buy now allow for a large quantity of wine to be stowed in a very small compass.

We will now go back to the hall, and in passing through it we must consider the ground-floor water-closet and lavatory. In every fair-sized house there should be these apartments arranged on the ground floor, and they are difficult apartments to arrange, as they should be out of the way, and at the same time easy of access and easy to find without showing too apparently what they are. Where I often place them is under the landing and stairs, and if the walls are of brick and the ceiling pugged and plastered, I do not think that any inconvenience is likely to arise from this arrangement. Where the mistake has so often been made is to put only a 1½-in. or 2-in. partition to them; but if you put 4½ in. brick walls in cement in them, I do not think it possible that anyone will herald his presence there to the whole household when using the flushing

cistern, which, as we know, certainly rings out its clarion note in a somewhat clear and aggressive manner.

Let us, however, pass on to the reception-rooms. We have already decided the position of the dining-room—at one end of the hall—not far from the entrance vestibule, which position was tied by the position of the pantry. A dining-room should be a parallelogram on plan, and it should not be too much cut up with bays and oriels, &c. These are for the drawing-room. The great points to consider in a dining-room are: (1) That it shall be wide enough for the servants to get easily round the table when the people are seated; (2) that the side-board shall be close to the serving-lobby and door; (3) that the fireplace shall be far enough away from the table that the persons seated at table shall not be roasted during meals (an ingle nook fireplace will obviate this in a narrow room); and (4) that if the window is at the end of the room and behind the end of the table, it shall not have a light in the middle, so that the host or hostess, or whoever is sitting at the end of the table, will be eating in comparative darkness, and like the lady in Gilbert's opera, "might very well be taken for forty-two in the dusk with the light behind her." If you must have a window at the end of the dining-room, put a mullion in the middle of it, if a mullioned window, or put two windows with a pier in the middle, and then contrive a window in the side wall, we will say towards the east, to get the morning sun. I think the best arrangement however for lighting a dining-room is to put the windows on the long side of the wall and an extra subsidiary window in the end wall. Then your hostess will eat in comfort and bless you, her architect, that you have, with true gallantry, considered not only her comfort, but the proper setting to her charms.

Well, now we come to the drawing-room. This, with the library, will probably be on the opposite side of the hall to the dining-room; and this is not a bad arrangement. A dining-room, after a meal has been served in it, ought to be aired, and it is not agreeable for people going in or coming out of the drawing-room to be running up against the servants either laying or clearing away the lunch or dinner "things." Besides, we still keep up the old fashion of going in to dinner in procession. Alas, not many old fashions are kept up now-a-days, so let us preserve those we can; and the procession across the hall is a pretty sight, and reminds one of what the polonaise or the minuet used to be.

The position of the drawing-room and library will probably be south and west. Perhaps, too, the library will have a window towards north. It would, however, be better to keep the window towards the west. The drawing-room can well face the west as well as south, so as to get the sun before setting; and as a rule the drawing-room is not much used before the afternoon. In the drawing-room you can show off all your little tit-bits, bows, oriels, bays, seats, &c. A drawing-room need not be, and is generally better for not being, a plain parallelogram. An L-shaped room is always cosier for a sitting-room, and besides, a room of this shape can be much more prettily furnished. If you cannot arrange the L-shape throw out a large bow window at one end or on one side, near the end of the room. A drawing-room may have many windows, only remember that there should be always a part of the room near the fireplace which will be well out of any draught from any window or door. The library will be probably next the drawing-room, and bear in mind that it will be necessary to arrange your windows and doors so that book-cases may be fitted up round the room. If your client's wife is a woman who has much "society," and gives dances, &c., you should arrange your library so that, by having sliding doors in the wall between the library and drawing-room, she can throw the two rooms into one. and make one big room for dances. In planning the drawing-room and library you should remember that the arrangement should be "telescopic"—either that the drawing-room can be compressed into a snug boudoir or opened out into a large ball-room.

Now let us go up the stairs, and in designing stairs make the treads wide, and the risers low. The old, easy staircases we find in old houses used to be 6 ft. and 7 ft. wide, whilst their risers were never higher than 4½ in. or 5 in. What a difference to the narrow ladder staircases we find now-a-days!

On the first floor, in economical planning, the first thing to consider is the position of bath-room and water-closet. We must try and arrange the water-closet so that the soil-pipe shall enter the drain where the principal ground floor water closet does, so that the soil-pipe (and soil-pipes are expensive things) shall act as the ventilator. Therefore, the water-closet must be, if not over, nearly over, the water-closet to ground floor; and the best position for the bath-room is generally over the pantry. In any case it should be over some such office, so that in case of any overflow, the water does not ruin some expensive tapestry or paper in a reception-room. If you put the bath-room over the pantry, you can take your waste pipe to empty over the trap which takes the pantry sink. The bed-rooms will be disposed over the rooms you have arranged on the ground floor. When planning bed-rooms, three things should be borne in mind: First, that you do not want so much light (otherwise windows) in a bed-room as you do in a sitting-room. One window to each bed-room will generally be sufficient. Secondly, always draw, when you plan the bed-rooms, the position of the bed, placing it well out of any draught from window or fireplace and door. And thirdly, always let your doors open, so that when open they hide the room. I generally try to arrange that for a sitting-room the door will be in the wall at right angles to the fireplace and at the furthest corner from the fireplace, whilst in a bed-room the door will be in the wall at right angles to the fireplace but at the nearest corner.

The cistern-room should be over the bath-room, and it should be easily got at.

As to cupboards. Some housewives are cracked about them, and would like to have them sprinkled about the house as they sprinkle their bows and ribbons. But beyond a housemaids' closet near the water-closet, and a linen closet near the bath-room, so that the hot-water pipes or cistern can keep the linen aired, I do not see the necessity of putting many cupboards about. There are, of course, the cupboards in kitchen, scullery, and store-rooms, but I think cupboards in bed-rooms are unsightly things, and that wardrobes are much more useful. This is a matter, however, in which you will be guided by your client.

Well now, gentlemen, we have discussed the general arrangements of a house and the disposition of the different rooms. The individual tastes and idiosyncracies of the client, and the exigencies of the site, will cause us sometimes, however, to alter in detail the positions of the rooms, but I think if we bear in mind the following points, where they will be possible, we shall not go far wrong in our plans:—

1. Have a good porch and hall, with the staircase not in full view of the entrance.
2. Have your pantry as near as possible to the entrance.
3. Have your dining-room and kitchen near your pantry and near each other.
4. If possible let all, or nearly all, your reception-rooms face the south; the kitchen and stairs and offices can then face the north.
5. Let your drawing-room be "telescopic," if possible.
6. Have your bath-room over your pantry.
7. Have as few passages as possible.

As to this last, which I would say is one of the most important, I would add this: Never skimp the width of your passages. Three inches is worth three times as much in a passage as in a room. The three inches would not be felt in a room, whereas it would be very much felt in a passage; and I think the great problem in all house planning is to reduce as much as possible the necessity of passages, but where you have one, make it a wide one. No passage ought to be less than 3 ft. 9 in. Although we can copy (though not slavishly) the forms of the houses of the sixteenth, seventeenth, and eighteenth century, their quaint gables, bay windows, oriels, turrets, porches, &c., we must adapt them to our modern ideas of plans. We can assimilate their good points and expurgate their bad.

It was, therefore, a very interesting study for me, when a client who had lived in, and whose family had owned Bramhall Hall, asked me to design him a small house with the general outside appearance of that fine old mansion, but adapted to a modern plan. I am sorry the job is in abeyance, otherwise I would have liked to have shown you the working drawings, but perhaps from the photographs and sketches you will be able to see how I got over the difficulties.*

Now let us consider the differences between designing a house for a client who likes these fine old houses, mullioned windows, oriels, &c., and designing a house for a client who wants sash windows and plain square rooms. In the one case you are not fettered; you can throw out a gable here, a gable there, and the more haphazard the design, the more happy it seems to be. I have often felt that the backs and sides of some houses designed now-a-days are more interesting than the fronts, and I think it is because the irregularity has not been studied. Studied irregularity is never pleasing. It is a fraud, and frauds are always seen through even if they cannot be explained. Studied irregularity, on the other hand, if there is nothing incongruous in it, is pleasing. We admire the tact, the skill, and the thought that has been expended on it. But for goodness' sake do not let us go back to the times when, to conform to regularity, we have a staircase and landing with balusters showing through the middle of a window, so that the window-sill may be on the same level as the adjoining sills. If the sills must be on a level, it is bad planning, and if they need not be on a level, it is bad designing. As to the differences in plan between what I call the Manor House style and the eighteenth-century style, in a nutshell, I would say, where in the one style you have irregularity in the disposition of the rooms, in the other you have regularity. In the one style you may put your bays out of the centre of the rooms and where they happen to come. In the other style you must think out before you decide on the general disposition of the rooms where you will have your bays and porticoes.

The author then referred to a few plans of houses which have been built, and which he exhibited. With regard to No. 1, a house which was built at Stanmore, the plan, he said, was very similar to what he had suggested to them as a simple working plan for a simple small house. As to No. 1, the entrance was to the north-north-east; the drawing and dining-room front faced the south-south-west, and the road with the pretty views was to the south-west. The ground sloped to the south. They would see there was a window in the dining-room at the end of the room, but he arranged a small window in the west wall of the room. A sitting-room with only a window at the end was never very happy. Give it a side window as well and they got cross lights, which he always thought improved the appearance. The bow-window at the side of the drawing-room was arranged to do away with the stiff appearance a drawing, a parallelogram on plan, would give, and at the same time to get the rays of the setting sun.

As to No. 2, a house built at Northwood,* the author said:—Many people have asked me the reason of the roof. Well, I will tell you. This house was designed with the closest regard to economy, and my client wanted stud walls covered with tiles for the first floor, as they would be cheaper than brick walls; but when I came to look at the by-laws of the local board I found that the walls must not be less than 9 in. As I wanted to help my client as much as I could, as every architect should his client, I thought "what could I do." And then the idea occurred to me. If I slope my walls they are no longer walls, but the *roof*, and that accounts for the design.

No. 3 is a house founded on No. 2 with additions. Bays have been thrown out, the gables have been varied, and a room added on each floor.

No. 4 is the plan of a house built at Maidenhead,† and is very much on the lines I have suggested to you. The back staircase is placed in the position it is to give light to the kitchen passage.

No. 5 is the plan of a house that was built at Harrow, and I think the fault of this plan is that the kitchen and offices are on the opposite side of the hall to the dining-room, but I was tied as to these, because the garden entrance and drive had to be on the west side of the house, and as the best views were towards the south-west, advantage had to be taken so that the drawing-room should get these views. The billiard-room was also a room that my client considered of importance and desired to be placed in a good position. The plan of a central hall with an open passage round on the first floor is a good one, as it impresses one with the feelings of the great height and airiness of the house.

No. 6 is an enlarged edition, as it were, of No. 1. It was proposed that a billiard-room and a swimming-bath with bed-rooms over, should be added at some future date to the west end of the hall. A light at one end and the servants' staircase as near the other end as possible are to give thorough light to it.

This house will be placed very nearly due north and south, and the best views are due south.

This finishes my remarks, and I can only conclude by saying that it has given me very

* Illustrated in the *Builder* for August 19, 1893.

* See *Builder* for July 16, 1892.
† See *Builder* for July 8, 1893.

great pleasure in addressing them to you, and that if I can give anyone any further information it will afford me the liveliest satisfaction.

Mr. Francis Hooper, in proposing a vote of thanks to Mr. Briggs, expressed regret that that gentleman was not present, and he would, therefore, couple with the name of the writer of the paper that of the reader of it—Mr. Goldsmith. It seemed to him (the speaker) that the wisest course for an architect to adopt, who wanted to control the garden design, was to show it on his early sketches, and in that case the client was more likely to consult him when the planting was under consideration. Mr. Briggs made no allusion to the question of building materials, although that was an extremely important point, even if it did not come directly into the subject of planning. It seemed to him best to adopt local materials as far as possible, so that, if they were working in a brick district, they should use brick, and if in a stone district stone. They should all try to aim at perfection, and he would venture to say that a great deal of care ought to be taken with regard to details; the position of fireplaces must be carefully considered. There was a plan by a very distinguished architect hanging on the wall, in which one of the best rooms was spoilt by the situation of its fireplace, the fireside being rendered the least comfortable spot in the room. The position of windows too, again, was a matter of great importance, and every room should be treated separately and in consideration of its purpose. It was only repeating an old piece of advice to say that, in the planning of any room, they ought to indicate the furniture; very many bedrooms were spoilt by no definite position being allotted to the bed. In dealing with drawing-rooms and sitting-rooms, he was glad that Mr. Briggs had suggested windows to two walls, as this added much to the cheerfulness of the rooms. Where rooms communicated, and were of a certain size, it was pleasant to be able to pass from the dining-room into the library, and from the library into the drawing-room, without going into the hall. With regard to the height of rooms, it was of great importance to proportion the height to the area of the room. Few things were so unsatisfactory as a room unnecessarily high or too low. Where the architect was designing two rooms side by side, one a large room and another small, it was sometimes well to vary the levels of the floor. This treatment often gave an opportunity for a pleasing effect to an interior.

Mr. Bernard Dicksee, in seconding the resolution, said that if the garden entrance could be put in it should not be forgotten. He built a house some time ago in which the garden entrance was omitted so as to reduce the expense, but his client had regretted it ever since; and this was an essential point, especially where dogs were kept. He could not agree with Mr. Briggs with regard to his dining-room window. Mr. Briggs appeared to object to the window in the centre, but nothing was so pleasant in a dining-room as to have a window extending nearly the whole length of the room.

Mr. S. B. Beale supported the vote of thanks, and added that Mr. Briggs appeared to have exhausted the subject of planning modern houses. If he had omitted to mention the garden entrance it was perhaps from the fact that he considered it so obviously a necessity that he did not think it necessary to refer to it. They could not lose sight of the fact that Mr. Briggs was dealing with a particular kind of plan, in exhibiting the drawings that he did that evening. He should have liked to have heard something on the question of cost, because he believed Mr. Briggs had made a special feature of that, and in his charming little *brochure* there was a series of interesting designs of what were termed "bungalows," which he believed were done at a very low figure. Mr. Briggs had referred to the great originality of Mr. Belcher's designs, and that same quality, he thought, would always be associated with the name of Mr. Briggs.

Mr. C. H. Brodie remarked that Mr. Briggs had said that some women were crazy about cupboards, leaving one almost to believe that these were not a necessity in a house. Now, he had had the advantage of residing some time in a country where cupboards were considered a part of the design of every house. He could speak from experience of the advantage of having cupboards, not simply small ones alongside the fireplace, in which an ulster could hardly hang, but where one could put a trunk or large portmanteau. If architects gave more attention to that matter, they would vastly improve the comfort of the house, and secure the goodwill of the guests, if they did not secure that of the man who paid for it. Mr. Beale had referred to the cost of some of Mr. Briggs's houses, shown in his little book, and it would be interesting to have some further information on that point, especially from the person who made up the accounts.

Mr. B. F. Fletcher said that there were one or two points in the paper which he could hardly agree with. In designing anything he had found it hard to do so in a book of squares, ruled to one-eighth of an inch; he would rather advise them to design a house on the one-sixteenth scale on an ordinary piece of drawing-paper. In Kerr's "English Gentleman's House" there was a good note in which the different aspects were given. Another point in this class of house which always cropped up was the number of reception rooms, and Mr. Briggs seemed to take it for granted that it was necessary to have three. Most ladies wanted three reception rooms, but did not as a rule give enough space for them, and the best thing was to knock out one of them, and have two good rooms instead of three bad ones. As to angle fire-places, these were most objectionable things, as one never could get round them, although they looked well on the plan, and filled up an awkward corner occasionally. These bungalow houses did not touch the question of the ordinary London houses. For fresh ideas in planning he believed the most instructive thing that anybody could do, was to come up there once a month and run through the American Journals. In these they would find fresh ideas in the way of planning, more than would be found in any English architectural journal. Garden planning was always undertaken in America by the architect, who called in the landscape architect to help him with the general working out and lay of the ground. This made a great deal of difference in the general effect.

Mr. F. T. W. Goldsmith wished to echo the remarks of Mr. Brodie in regard to cupboards. He believed, not only in cupboards being in every room, but very large cupboards too. Mr. Fletcher had wondered how anybody could like an angle fireplace, but he knew many who liked these fireplaces. In fact, to his mind, there was only one decent place to put a fireplace, viz., in the corner of the room, and only those who had lived in a room with a carefully-designed angle fireplace knew the beauty and solid comfort of it. As to American house planning, they, in England, could hardly be expected to admire American things. They were Englishmen, with English habits and tastes, and, with all its faults, they loved the English house best. The houses put up by Mr. Belcher and Mr. George, or the bungalows of Mr. Briggs, were just as comfortable as any American house.

The President, in putting the vote of thanks to the meeting, said that the first thing which struck one was the necessity of consulting one's client in regard to the style of the building, which showed what a wrong state of things existed at present. There ought to be only one style in which English houses could be built, but at the present moment there were many styles in use. Mr. Hooper had referred to the height of the rooms, and this was a most important point. The client, as a rule, wished his rooms to be much too high, thinking that they were healthier on that account, but this was a great mistake, and made the rooms ugly. For an ordinary house it was a mistake to make rooms over 10 ft. high, an opinion which he had formed after having a good deal of experience in such matters. He believed from an artistic point of view low rooms had a great advantage over high ones, and the same remark applied to corridors. He was struck that morning, in one of his own buildings, where, by force of circumstances, one floor had to be lower than the others, to find that it looked much the best. Another matter arising out of the height of rooms was a feature he had seen in Mr. Ernest George's houses, which had a very pretty effect. He had a large drawing-room, about 16 ft. high, with a spacious chimney corner, generally about 7 ft. in height, and over that chimney corner he got a sort of little boudoir, approached by a staircase in the angle of the room. This was a singularly pretty feature, and was of great use to the hostess.

Mr. Dicksee remarked that the same thing was done by Mr. Norman Shaw, in a house near Epsom.

The President, continuing, said that another matter on which Mr. Briggs seemed to be mistaken was the desirability of having folding doors between the library and the drawing-room, as this would spoil both apartments. If he lived in a house of the sort, he would not permit his library to be turned upside down for the sake of a dance, and, then again, if the whole of one side of the room was to be occupied by folding doors, where were the books to be put? It was well to have the bed-rooms, if possible, with a more or less eastern aspect, as there was nothing like the light of the rising sun. There was no place where a seat was more pleasant and desirable than in a garden entrance. He agreed with Mr. Briggs as to the desirability of planning the furniture of a house, and that applied especially to bed-rooms.

The vote of thanks was then put and carried by acclamation, as was one to the several gentlemen who had lent plans and drawings.

The proceedings then terminated.

THE ARCHITECTURAL ASSOCIATION SPRING VISITS:

ALL SAINTS' CHURCH, WEST DULWICH.

ON Saturday last a visit, arranged by Mr. B. F. Fletcher, Junior Hon. Sec. of the Architectural Association, was paid to the new church of All Saints', West Dulwich. The party were met at the church by Mr. Fellowes-Prynne, F.R.I.B.A., the architect, who had travelled up specially from Cornwall in order to meet the members.

The site slopes 28 ft. from west to east, which has given rise to some elaborate buttressing of the apse, round which a service passage 3 ft. wide has been carried on arches, connecting the buttresses, the morning chapel apse being treated in the same way. Below each of these apses is a chapel, while under the further portion of the site is a large Sunday-school. The nave floor is supported on girders and stanchions, and is formed of concrete. The foundations at the lower end of the site have been taken down 18 ft. below the school level, but in spite of all the expense involved, the cost of the church, when completed, will not exceed 7*l.* per sitting.

The plan is laid out on modern lines with a wide nave, 40 ft. between the piers and 65 ft. high to the under side of the wooden close-boarded ceiling. The materials used in the construction, both internally and externally, are Corsham Down stone and red bricks. The treatment of the chancel, always difficult to manage in connexion with wide naves without losing dignity, has been cleverly managed by placing a tower on piers, diamond-wise, at the junction of the nave and chancel on the north and south; by this means a view is obtained of the lady chapel altar from the nave, and also a view of the principal altar from the side chapel. These towers were designed to be carried up on each side of the nave, but, in consequence of expense, that on the north will only be carried up its full height.

Above the main arcade to the nave, spaces have been left for mosaic panels of the "Stations of the Cross."

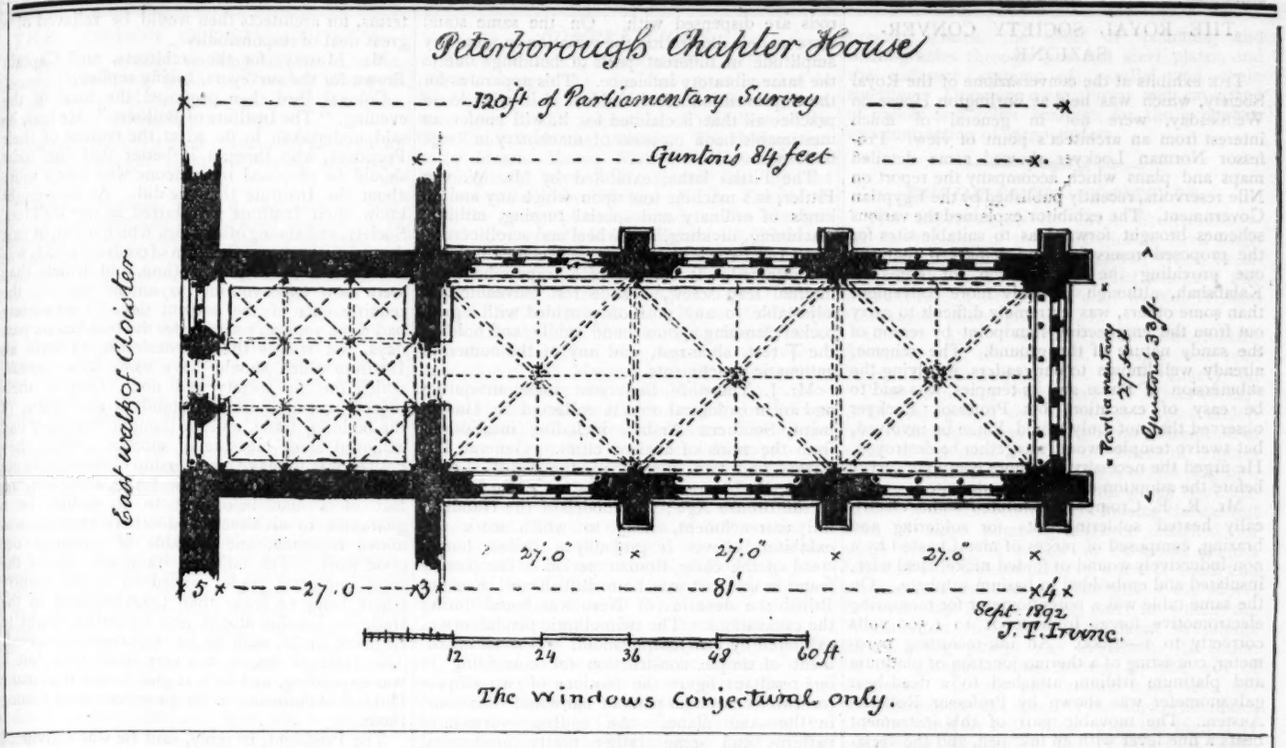
The chancel arch is fitted in with a stone tracery screen in a manner somewhat resembling the Lady Chapel at Gloucester, and is further treated with wrought ironwork bands, the central one supporting the cross.

The Morning Chapel is very large, occupying the whole of the wide north aisle, and seating about 200 people. It is approached by external door and staircase, and has a sanctuary open to the chancel by arcades, and is vaulted in wood.

The choir is planned to accommodate sixty men and boys, which is further increased by a ladies' choir placed over the north choir aisle, and reached by a circular wooden staircase. This gallery will be also used for the instrumental music on occasions. The organ is placed over the south chancel aisle, and is well opened to the church by arches into the chancel and into the wide aisle on the south.

The chancel has been entirely completed, and has some admirable little statues of the Apostles, the method by which these were obtained, by making different sections of the congregation compete for the honour of giving them, being quaintly described by the Vicar, who accompanied the party.

A feature of the church is that everything in the shape of dossals, altar-hangings, and mats have been designed by the architect. The altar-table has an open-tracery front, behind which the frontals can be placed by means of an end access door, the framework being of oak, gilded and coloured. The heating is carried out by means of the high-pressure hot-water system, the pipes being 1¼ in. internal diameter, and specially fitted with stop-cocks, so that portions may be warmed as wanted. The visit was one of the most instructive of the session, every point of construction and decoration being very kindly explained by Mr. Fellowes-Prynne.


Peterborough Chapter House
120ft of Parliamentary Survey
Gunton's 84 feet
East walk of Cloister
Parliamentary 27 feet
Gunton's 33 ft
27.0" x 27.0" x 27.0" x
5 x 27.0 x 3 81' x 4 x
Sept 1892
J. T. Irvine.
12 24 36 48 60 ft
The windows conjectural only.

The party were afterwards entertained at tea by the Rev. J. Beeby, M.A., and separated after a hearty vote of thanks had been passed to Mr. Fellowes-Prynne and to the Vicar for his hospitality. The latter replied in a humorous speech, referring to the necessity of seeing the outside, as he did, with an eye of fancy, seeing it in a completed state.

THE ANCIENT CHAPTER-HOUSE AT PETERBOROUGH.

THE following suggestions are offered towards clearing up a difficulty in the architectural history of the ancient Chapter-house of Peterborough Cathedral, with regard to its dimensions recorded in the Parliamentary Survey of 1649, and those given by Gunton in his history of the structure.

This Chapter-house and the buildings therewith connected all disappeared during the Commonwealth period, probably in or soon after 1651. In 1669, August 6, the chapter leased to Mr. Francis Standish the square piece of ground on which it and part of the library had stood for forty years.

The Parliamentary survey in 1649 describes it as x[l] yards in length by 9 yards in breadth (*i.e.*, 120 ft. long by 27 ft. broad). The Rev. Simon Gunton, who was a prebend of the Cathedral, and had seen the building standing, gives its dimensions as 28 yards long by 11 yards broad (*i.e.*, 84 ft. long by 33 ft. broad). At first sight these statements appear irreconcilable, but when considered from an architectural standpoint they are found both to agree and give direct evidence of their accuracy.

To reconcile these two statements it is but necessary to remember that it was the Chapter-house of a Benedictine monastery, and had, therefore, a lobby in front towards the east walls of the cloister, over which the passage from the dormitory to the church, when going to the night services, led. Thus its vaulting must have been much lower than that over the Chapter-room. The Parliamentary survey was evidently inclusive of such lobby, and gave the whole external length, though its width was but that of the interior, as will be seen.

The Rev. Simon Gunton's length of 84 ft. gave but from the entrance of the Chapter-room to its east wall, while his width gave the whole width, including its side walls; so, if to the 27 ft. of the Parliamentary Survey is added the width of two side walls of 3 ft. each, we see at once how his 33 ft. are produced. If, again, the whole length of 120 ft. of the Survey is taken and divided into its parts, namely, an east gable of 4 ft. (or 3 ft. 6 in.), a Chapter-room of three bays of 27 ft., or 81 ft., a 3 ft. (or 3 ft. 6 in.) dividing wall from the lobby, and next a lobby of 27 ft., with a west wall of 5 ft. to permit the ordering of the several orders of the arch to the cloister, the whole gives just the Survey amount of 120 ft., while the 81 ft. of the hall, with 3 ft. of dividing wall, just gives Gunton's 84 ft.

Thus both statements, differing though they do, are found to be in accord, and mutually support each other's testimony. J. T. IRVINE.

LONDON STREETS AND BUILDINGS BILL.

THE Select Committee of the House of Commons, of which Mr. Stuart Wortley was appointed chairman, began on the 30th ult., the consideration of the Bill promoted by the London County Council to consolidate and amend the enactments relating to London streets and buildings. The measure consists of 192 clauses, besides schedules, and is opposed by a number of petitioners, including the Royal Institute of British Architects, the Surveyors' Institute, Commissioners of Sewers, and lessees and owners and occupiers. Mr. Cripps, Q.C., opened the case for the Bill, explaining that the amendments in the existing law proposed by the London County Council were based upon the principles either that modern requirements on sanitary grounds were in advance of what was found to be sufficient under the old Acts, or that the bodies that had to carry them out had found faults of principle in them; and it was in reference to these points that the Council sought to make amendments as apart from consolidation and revision. The learned counsel went on to explain the provisions of the various parts of the Bill, indicating where it proposed to make any change in principle, and notifying where changes had been made with a view of meeting objections. The first part of the measure had to do with the formation and widening of streets, and generally, as apart from mere consolidation, there were only three new points which arose upon it. The Council desired that notice should be given before streets were laid out or formed. At the present time streets could be laid out at a minimum width of 40 ft.; the Council asked that in certain cases the minimum width should be 60 ft. Another proposal was that as regards new streets not being within a distance of two miles from St. Paul's they might require that beyond the full width of the roadway a space of 5 ft. should be left between the footway and any building. Mr. Cripps explained in answer to a question that this provision might apply to an old street so altered as to become a new street within the meaning of the Act. In the second part of the Bill, which deals with the question of lines of building frontage, he was not aware that any question of principle would arise except possibly as regarded the question of a concurrent jurisdiction now exercised by the vestries and County Council, and as the Bill stood it was certainly argueable that the jurisdiction would no longer be in the hands of the local authority. They proposed that appeals under the Act should go to a tribunal of appeal, constituted in extension of that constituted under the Act of 1890, and consisting of five instead of three members, one of whom would be appointed by the Council. Part 3 of the Bill dealt with the naming and numbering of streets, and he was not aware that anything would arise upon that, except questions of drafting. Asked whether the propriety of giving the Postmaster-General some voice in this matter had been considered, Mr. Cripps said he was told that this work was always done in communication with the Department. The next part of the Bill contained proposals carrying the existing law further than it goes at present. These were made entirely for sanitary and health reasons. In the Act of 1890, consolidating generally the provisions relating to the housing of the working classes, there were provisions as to unhealthy areas or houses or obstructive buildings, but Mr. Cripps explained that while you were destroying unhealthy dwellings in one part of London you might, under the present law, have them created in another part of the metropolis; and in substance the effect of these provisions of the Bill would be that the Council would be protected againt the creation of these unhealthy sites and unhealthy dwellings in the future. The height of buildings was dealt with being reduced from the general limit of 90 ft. fixed by the Act of 1890 to a general limit of 75 ft. The learned counsel dealt with other provisions of the measure, and the Committee eventually adjourned.

THE INCORPORATED ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

THE seventeenth Voluntary Pass Examination of candidates for the office of Municipal Engineer and Local Board Surveyor, carried out under the auspices of this Association, was held at the Institution of Civil Engineers, Great George-street, Westminster, S.W., on the 27th and 28th ult. The written portion of the examination was taken on the first day, and the greater part of the second day was occupied in the *viva voce* examination. Twenty-one candidates sat for the examination. The examiners were in (1) Engineering as Applied to Municipal Work, Mr. W. Santo Crimp, M.Inst.C.E.; (2) Building Construction, Mr. Charles Jones, M.Inst.C.E.; (3) Sanitary Science, Mr. Lewis Angell, M.Inst.C.E.; (4) Public Health Law, M.. T. De C. Meade, M.Inst.C.E. Mr. Angell was the Superintending Examiner. The next examination will be held in Birmingham in October next.

ROBERTS'S RAIN-WATER SEPARATOR.—We are asked to state that this well-known instrument, having been reserved "for further practical trial" by the judges at the Portsmouth Exhibition of the Sanitary Institute in 1892, has now, after trial, been this year awarded a medal.

THE ROYAL SOCIETY CONVERSAZIONE.

THE exhibits at the conversazione of the Royal Society, which was held at Burlington House on Wednesday, were not in general of much interest from an architect's point of view. Professor Norman Lockyer showed some detailed maps and plans which accompany the report on Nile reservoirs, recently published by the Egyptian Government. The exhibitor explained the various schemes brought forward as to suitable sites for the proposed reservoirs, and remarked that the one providing the construction of dams at Kalabshah, although probably more convenient than some others, was extremely difficult to carry out from the engineering standpoint by reason of the sandy nature of the ground. The scheme, already well-known to our readers, involving the submersion of Philæ and its temples, was said to be easy of execution, but Professor Lockyer observed that not only would Philæ be involved, but twelve temples would altogether be destroyed. He urged the necessity of a more complete survey before the adoption of any particular site.

Mr. R. E. Crompton exhibited some electrically heated soldering bits for soldering and brazing, composed of pieces of metal heated by a non-inductively wound or folded nickel steel wire, insulated and embedded in barium sulphate. On the same table was a potentiometer for measuring electromotive forces from ·0001 to 1,500 volts correctly to 1—2,000. An ink-recording pyrometer, consisting of a thermo-junction of platinum and platinum iridium attached to a dead-beat galvanometer was shown by Professor Roberts-Austen. The movable part of this instrument bears a fine lever with an ink pen, and the variations of temperature are recorded by a dotted line on paper coiled round a revolving cylinder. Another exhibit of a similar nature was by Mr. E. H. Griffiths, and consisted of long distance direct-reading electrical thermometers and pyrometers. These will undoubtedly prove of great practical value, for the indicator can be placed at any distance from the hot chamber, and any number of thermometers can be used with one indicator. The correct temperature can be obtained without calculation, whilst the readings of the instruments are independent of changes in the E.M.F. of the battery, of the temperature of the leads, and of the air. A very interesting object was an electric furnace shown by M. Henri Moissan, of Paris, which consisted of a block of limestone having a cavity cut in it. This cavity held a small crucible composed of a mixture of carbon and magnesia. The electrodes were made of hard carbon and passed through holes cut on either side of the surface, meeting within the cavity. A temperature of about 3,500 deg. C. may be produced; the metals are reduced by heating a mixture of their oxides with finely divided carbon, and for this purpose a current of about 600 ampères and 60 volts is employed. The Rev. F. J. Smith had a torsion ergometer or work-measuring machine, showing its use in connexion with a mechanical integrator, and as an electrical governor. Sir David Salomons exhibited apparatus for bringing out some new phenomena in vacuum tubes, by the application of alternate current. These experiments are pretty enough, and likely to attract the tyro, but they are getting rather too frequent at exhibitions of electrical appliances, and we should have thought that they were somewhat out of place at the Royal Society, were we not reminded that the Council of that august body are not so careful in selecting absolutely new things for exhibition as they used to be. A somewhat *dilettante* exhibit was that by Professor Silvanus Thompson, illustrating polyphase electric currents. Judging from the nature of the experiments carried out, the general impression left on the mind of the spectator was that the learned Professor had discovered a method of causing a half-a-crown piece to spin for hours without stopping—hardly up to the mark of what an exhibit at the Royal Society should be.

Mr. W. Worby Beaumont showed a vibromotor. The models illustrated a new mechanical motion which may be applied for actuating reciprocating machinery and for the prevention of vibration. Motion is either secured or prevented by the reaction of a rotating weight unsymmetric about its axis of rotation. The motion imparted being due to reaction is the precise equivalent of the work expended in forcing the weight to rotate on an axis not its mass axis. Though somewhat complex in theory, the apparatus in practice consists simply of an unbalanced rotating eccentric piece with supports on something free to move. Cranks and connecting-rods are dispensed with. On the same stand were models illustrating the variation in vibratory amplitude in different parts of buildings due to the same vibratory influence. This apparatus for the "prevention of vibration," if it will do in practice all that is claimed for it, will confer an inestimable boon on users of machinery in large buildings.

The Pittler lathe, exhibited by Mr. W. von Pittler, is a machine tool upon which any and all kinds of ordinary and special turning, milling, machining, dividing, and wheel and scroll-cutting work can be executed under advantages hitherto not attained. It consists of a trapeze-bed with internal lead screw, a slide rest moveable and adjustable to any position provided with a grip-socket clamping upon a round saddle, and holding the T rest, slide-rest, and any of the numerous automatic attachments.

Mr. J. Theodore Bent sent some antiquities and anthropological objects collected in Hadramânt, Southern Arabia, including inscriptions from the ruins of ancient cities. General Pitt Rivers had two models of the South Lodge Camp, Rushmore Park, Wilts, an entrenchment of the Bronze Age; also models of the Handley-hill entrenchment, near to which work the exhibitor believes is probably a British homestead of the early Roman period. The pottery found in this last was both British and Roman-British; a denarius of Nero was found during the excavations. The twin-elliptic pendulum was exhibited by Mr. Joseph Goold. It is an instrument of simple construction for combining in one resultant figure the motions of two ellipses (or two isochronous pairs of harmonic vibrations) in the same plane. An endless variety of patterns and some rather pretty mechanical designs are produced. The most wonderful exhibit, perhaps, was the magnetarium for reproducing the phenomena of terrestrial magnetism and the secular changes in its horizontal and vertical components, by Mr. Henry Wilde. Mr. H. A. Fleuss had a mechanical pump for the rapid production of very high vacua; by its use experiments formerly occupying hours can be conducted in as many minutes.

Amongst the numerous other exhibits may be mentioned bathymetrical maps of the English Lakes by Dr. H. R. Mill and Mr Edward Heawoood; charts and sections showing temperature of parts of the North Sea, by Mr. H. N. Dickson; siphon recorder, Muirhead's artificial cable and automatic curb transmitter, by Dr. Alex. Muirhead; models of an improved method of communication between shore stations and lightships, by Mr. J. Wimshurst; specimens of "cotton xyloidin," by Dr. J. H. Gladstone; there was also the usual complement of natural history and medical objects.

THE INSTITUTE OF BUILDERS:

ANNUAL DINNER.

THE annual dinner of the Institute of Builders was held on Wednesday evening last in the "Marble Salon" of the Grand Hotel, Charing Cross, the President, Mr. R. Neill, jun., of Manchester, in the chair. About sixty members and visitors sat down to table, amongst whom were Mr. J. W. Maclure, M.P., Colonel S. G. Bird, Mr. Andrew Murray, Surveyor to the City of London, Mr. W. H. White, Secretary to the Royal Institute of British Architects, Colonel Bridgford, Colonel Trollope, and Messrs. Leonard J. Maton, C. R. Gribble, W. Grimshaw, Archibald Neill, Jas. Kershaw, J. Howard Colls, J. Jackson, Henry Holloway, Basil P. Ellis, Joseph Randall, John Bowen, J.P., S. Wheeler, W. Scrivener, F. J. Dove, H. H. Bartlett, Frank May, J.P., Wm. Shepherd, Thos. Hall, A. Bush, Geo. E. Codd, and R. S. Henshaw, Secretary.

The loyal and patriotic toasts having been proposed from the chair and duly honoured (the toast of the "Navy, Army, and Auxiliary Forces," being coupled with the name of Colonel Bridgford, who responded),

Mr. J. Howard Colls proposed, in humorous terms, the toast of "The Houses of Parliament."

Mr. J. W. Maclure, M.P., having replied,

Mr. F. J. Dove next proposed "The Architects and Surveyors," coupled with the name of Mr. A. Murray. For a long time past, he said, the architects and builders had been discussing the question of contracts, and, with the exception of one clause, they were now pretty well agreed, and with regard to that clause, had it not been for one architect, an expert gentleman, it would have been settled long since. He (the speaker) hoped the question would soon be settled on equitable terms, for architects then would be relieved of a great deal of responsibility.

Mr. Murray, for the architects, and Captain Brown for the surveyors, briefly replied.

Colonel Bird then proposed the toast of the evening, "The Institute of Builders." He had, he said, undertaken to do so at the request of their President, who thought it better that the toast should be proposed by someone who knew more about the Institute than he did. As they might know, their Institute was started as the Builders' Society, and among other work which it did, in past days, was to arrange the form of contract which was in existence at the present time, and which they were now endeavouring to amend to suit the requirements of the present day. That society had done yeoman's service for the builders in past days, but it was thought desirable to form an Institute which should have some *locus standi*, which the old society had not. One of their objects was to raise the standard and status of the building trade, and he thought that they had achieved some measure of success. What they desired was to make membership of their Institute a sort of blue ribbon of the trade, and that the fact of a man belonging to it should be a guarantee to architects and others that he was above reproach, and capable of carrying out good work. The building trade was one of the most important trades carried on in the country (there being no fewer than 3,000 engaged in the trade in London alone), and a position ought to be made for it, such as its importance deserved. The Institute began in a very small way, but it was expanding, and he was glad to say that many builders of eminence in the provinces were joining them.

The President, in reply, said he was convinced that the Institute had been the means of conferring a great many benefits upon the building trade, and he and other contractors in the Provinces felt that the Institute was endeavouring to do good to the whole building community. Reference had been made to the County Council doing its own work: he might add that in his opinion that body could not build as cheaply and as well as members of that Institute.

Mr. H. H. Bartlett next proposed the toast of "The Visitors," coupled with the name of Mr. Young, who, in reply, said that builders appreciated good work better than anyone else, perhaps, architects included. But it was not only architects and builders who were interested in building; the whole public was interested in good building. In past days, when a building was to be carried out, the first thing done was to procure the best possible design; the next was to get the work done in the best possible manner; and the third, to get the work done at a fair and reasonable price. No man, no public body, ought to be expected to pay more than a fair and reasonable price, just as they had no right to pay less. Another system seemed to be working to-day. The first object was to get the cheapest possible plan, and the next was to get the work carried out in the cheapest possible manner. Could good building be done in that manner? He thought not. But the evil did not rest there, for often, a year or so after the building was finished, signs of decay were noticeable, and the result was: committees of investigation and general recrimination, simply because our modern public bodies had the mistaken notion that cheapness was economy. Economy was cheapness, but it never followed that cheapness was economy.

The proceedings soon after terminated.

ARCHITECTURAL ASSOCIATION. — DISCUSSION SECTION.—A meeting of the Discussion Section of the Association was held at 56, Great Marlborough-street, W., on the 2nd inst., when Mr. Max Clarke, A.R.I.B.A,, read a paper on "Architects' Work and 5 per cent." The discussion was opened by Mr. S. B. Beale, and was continued by Messrs. W. H. White, E. Greenop, H. A. Satchell, and the Chairman. Mr. Edwin T. Hall attended as special Visitor and summed up the discussion. The following officers were re-elected for the Session 1894-5:—Chairman, Mr. W. H. White; Vice-Chairman, Mr. Herbert A. Satchell; Hon. Secretaries, Mr. William Pywell and Mr. Matthew Garbutt.

SANITARY INSTITUTE CONGRESS, LIVERPOOL.—Dr. Thomas Stevenson, F.R.C.P., Scientific Analyst to the Home Office, will act as President of Section III. "Chemistry, Meteorology, and Geology," and Dr. Edward Klein, F.R.S., will be the President of Section I. "Sanitary Science and Preventive Medicine." Mr. A. M. Fowler, M.Inst.C.E., of Manchester, will act as President of the Conference of Municipal and County Engineers to be held in connexion with the Congress of the Sanitary Institute. The Congress is to be held in September next.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday afternoon at the County Hall, Spring-gardens, Mr. John Hutton, the Chairman, presiding.

Hanwell Asylum Improvements.—The Asylums Committee brought up the following adjourned report:—

"Hanwell Asylum, while it continues to bear favourable comparison with its sister asylums as to death and recovery rates, is admittedly very defective in structural respects, more particularly as to ventilation and lighting, and its basement dormitories, which according to modern views are undesirable. Seeing that a large part of this institution has been in existence since 1831, this will hardly be cause for surprise. Both our predecessors and ourselves have periodically given great attention to the matter, and we have recently had before us plans prepared by Mr. Clifford Smith, our engineer, and Mr. Ernest M. Martin, the resident engineer of the asylum, which, if adopted, we are of opinion will, at a comparatively small cost, effectually bring this old asylum well into line with those of more recent date; and, while effecting the much-to-be-desired abolition of the greater part of the basement dormitories, will increase the total accommodation for patients from 1,900 to 2,000 beds—in itself a most important consideration, having regard to the want of asylum accommodation in London. Briefly, the scheme is to abolish single rooms on one side of the wards where they now exist on both sides, and to convert the space thus gained into day-room accommodation, at the same time improving the ventilation. Dormitories will be built off the day-rooms for the patients so displaced, and, wherever possible, additional light will be afforded by removal of internal walls and substitution of glass and iron. Annexes to the day-rooms will be built to contain the most modern sanitary, lavatory, and water-closet accommodation, and ward scullieries will also be provided. The remaining single rooms will be altered. Extensions and additional floors will be built to accommodate the patients displaced by the abolition of the dormitories in the basement. The approximate cost of these improvements is estimated at 39,000*l.*, and of the necessary furniture for the extensions, 2,000*l.* We propose that the work, to suit the asylum arrangements should be spread over three years, and that during the present financial year the sum of 10,000*l.* (provided in the Money Bill estimates) shall not be exceeded. Having regard to the safety of the patients, and the proper working and discipline of the asylum, we think it necessary that the work should be carried out by our own staff of workmen, under the direction of the asylum's engineer. We recommend—

'That, subject to an estimate being submitted to the Council by the Finance Committee as required by the statute, and to the approval of the plans by the Secretary of State, the expenditure of 41,000*l.* be authorised for improving Hanwell Asylum, and providing the necessary furniture for the extra patients proposed to be accommodated.'"

After a short discussion the recommendation was agreed to.

London Streets and Buildings Bill.—Mr. Hubbard moved * "That there solution of the Council of April 24, 1894, deciding not to withdraw from the London Streets and Buildings Bill paragraphs 3 and 5 of clause 175 relating to the storing of wood and timber be rescinded; and that the paragraphs in question be withdrawn on the opponents of the clause giving an undertaking to withdraw their opposition." In the course of thirteen years there had only been fifty fires in wood-yards in London, or an average of four per year, and he contended that it was not desirable that the resolution referred to should become law. If it did it would have the effect of dislocating the wood trade.

Mr. Moss seconded.

Mr. John Burns, M.P., said that the paragraphs were the most important in the Bill, and he strongly opposed their withdrawal.

Mr. J. W. Benn, M.P., said the retention of the paragraphs in question would wreck what was otherwise a very good Bill.

After a long discussion the motion was carried by 52 to 32.

The Council adjourned at 7 o'clock.

THE CHESTER SOCIETY OF NATURAL SCIENCE AND LITERATURE.—The annual meeting of this society was held at the Grosvenor Museum, Chester, on the 26th ult., after which, at the request of the society, Mr. Edward Robins, A.M.I.C.E., F.S.I., read a technical paper on "Scavenging and the Disposal of House Refuse." The lecture was illustrated by diagrams and lantern slides. The lecturer gave an exhaustive description of the various processes for the collection and disposal of house, street, and trade refuse.

* See last week's *Builder*, page 330.

COMPETITIONS.

MEAT MARKET, BIRMINGHAM.—The competitive designs for the new meat market in Bradford-street and Cheapside, Birmingham, were open to the inspection of members of the City Council on the 26th ult. The designs sent in by Messrs. Essex, Nichol, & Goodman, of Birmingham, have been placed first by the assessor; those by Messrs. J. A. Cossins & Peacock being placed second. The designs placed third were by Messrs. Bateman & Bateman, also of Birmingham.

DARLINGTON MUNICIPAL BUILDINGS.—A special meeting of the Darlington Town Council was held on the 27th ult., the Mayor (Councillor G. W. Bartlett) in the chair, to consider what steps should be taken with regard to the recommendation of the Markets and Fairs Committee that the necessary steps should be taken to proceed with the erection of new municipal buildings according to the first premiated plans. The Mayor said that in response to a three-fold request on the part of burgesses, property owners, and ratepayers to him, a town's meeting had been held, at which a resolution was passed almost unanimously that "in the opinion of this meeting it is not expedient at the present time to make the expenditure on the new Municipal Buildings contemplated by the Town Council." The minutes before them were those of the Markets and Fairs Committee that notice be at once given to the tenants occupying the buildings on the proposed site, and that such steps should be taken as were necessary to proceed with the erection of the new Municipal Buildings according to the first premiated design. Councillor Wallis said he might say that since the meeting held in the Central Hall he had consulted the Sub-Markets Committee, and the majority were in favour of not moving the resolution for the adoption of the committee's minutes. He would withdraw the minute. This concluded the business.

BOARD SCHOOLS, LIVERPOOL.—In response to advertisements inviting designs from architects for the new schools to be erected in Heyworth-street, Everton, by the Liverpool School Board, forty-six sets of drawings were submitted, all under motto. The Board, on the advice of Mr. E. R. Robson, Architect to the Education Department, who acted as professional assessor, have awarded the first place to the plans marked "Acme," by Mr. W. Rushworth, of London. The premium of twenty-five guineas for the second in order of merit goes to Mr. M. Treleaven Reade, of Liverpool; and the fifteen guineas for third place is taken by Messrs. Butterworth & Duncan, of Rochdale. A special premium of ten guineas is to be given to Mr. W. J. Hale, of Sheffield, whose plans were placed fourth.

HARTLEPOOL SCHOOL BOARD.—In the competition for the Hart-road Schools, the assessor, Mr. Leeson, architect, of Newcastle, has awarded the first place to the designs of Mr. J. Mitchell Bottomley, architect, Middlesbrough and Leeds.

CONSERVATIVE CLUB, SANDOWN.—The committee of this club some months since advertised a competition for plans for a new club-house. Premiums were offered for the two best plans, and forty-three competitors sent in plans from all parts of the kingdom. The first premium was awarded to Mr. Edgar Hartley, of Eccles, near Manchester; and the second to Mr. F. H. Dancaster, of Boscombe, near Bournemouth. The work is being carried out by Mr. F. Colenutt, builder, of Sandown.

ARCHITECTURAL SOCIETIES.

CARLISLE ARCHITECTURAL, ENGINEERING, AND SURVEYING ASSOCIATION.—On the 25th ult., in the Town Hall, Carlisle, the third session of this Association was brought to a conclusion by a paper on "Girder Works and Strains," delivered by Mr. W. Howard-Smith, A.M.Inst.C.E., City Surveyor. The lecturer commenced by giving simple definitions of the meaning of the words strain, stress, moment of rupture, shearing stress, moment of resistance, &c.; then by a large number of coloured diagrams showing girders, beams, and cantilevers loaded in various ways, and the methods of ascertaining the strains at the various parts mathematically and graphically, he explained all the necessary formulæ to be considered in calculating the amount of material required for girders of various sections to bear the strains at the different points. The importance of considering wind pressure in calculating for the strength of large span bridges was touched upon, and the nature of the special bracing to be provided. The paper also dealt with the ultimate resistance of steel and iron to tensional or compressive strains, the effect of punching and drilling holes through iron and steel plates, and the different systems of parallel and chain rivetting. Drawings were shown and explained of rocker and roller bearings for the expansion and contraction of large girders.

ENGINEERING SOCIETIES.

THE INSTITUTION OF CIVIL ENGINEERS.—At the meeting of the Institution of Civil Engineers on the 1st inst., Mr. Alfred Giles, President, in the chair, the paper read was on "The Manufacture of Briquette Fuel," by Mr. William Colquhoun, Assoc.M.Inst.C.E.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.—On the 26th ult. a paper was read before this society by Mr. A. J. Emery on "Steam Pumping Machinery for Waterworks." After dealing with the general principles underlying waterworks service, a general description of some of the most notable specimens of engines for this service followed. The Cornish engines, the merits of and objections to which were discussed, were first referred to as being the earliest class of large pumping engines designed for water supply. A review of fly-wheel engines followed with a description of a few of these and a synopsis of some tests. The gist of the paper, however, lay in the latter part, in which the Worthington high duty attachment to duplex direct acting pumps was explained, its action on the plungers being shown by the aid of diagrams. It was also shown how, in a fly-wheel engine, as the speed of the engine decreases the duty rapidly falls, while with the high duty attachment mentioned the economy is independent of the speed and load on the engine. Following this, several examples of Worthington pumping machinery were noted and extracts given from tests of some of the more prominent engines of this class. It was also stated that about 70 per cent. of all the water from the Thames used in the Metropolis is now being pumped by Worthington direct acting duplex pumping engines.

Illustrations.

CHRISTCHURCH OR CATHEDRAL OF THE HOLY TRINITY, DUBLIN.*

BY THOMAS DREW, R.H.A.

IN perambulating the cities of the kingdom to make an exhaustive record of their ancient Cathedrals in the *Builder* Cathedral Series, the recorder finds a unique position in the City and See of Dublin possessed of two ancient Cathedrals, one intra-mural and one extra-mural. The architectural style of both which remains on evidence would indicate to the architectural student contemporaneous erection in the beginning of the thirteenth century. Those who study these two churches more closely will find that they are so absolutely unlike in every characteristic of plan and details, that they might be imagined to be cathedrals of two different lands separated by seas. Where two cathedrals are found, like two rulers or two rival beauties in one community, it follows that each must have its train of adherents and admirers. It has naturally been so in Dublin City throughout six and a half centuries. The local contention for predence is as old as St. Patrick's Cathedral itself. The ample store of records which Christchurch possesses of the *querulæ* of the two churches, in the original bulls of Popes and solemn deeds of submission, are of record that the older foundation maintained its position and precedence as the mother church.

The *Builder* series has taken first in order of illustration the extra-mural Church of St. Patrick as the larger, statelier, and more popularly-known out of Dublin of the two churches. The very incident of its identification with the life and career of Swift has made it a widely-known church of the world beyond Dublin.

St. Patrick's owes its existence, as has been explained in a preceding article, to the individual effort of two Anglo-Norman prelates introduced

* The series of the "Ancient Cathedrals of Ireland," which was begun in our issue of April 7, will be continued in the first number of each month, until June next. Particulars of this and of the "English and Welsh" and of the "Scottish" series will be found on page 360. The series of illustrations of the "Abbeys of Great Britain" will be resumed in July next. No. 1 "Westminster," was given in our New Year's number, January 6, 1894.

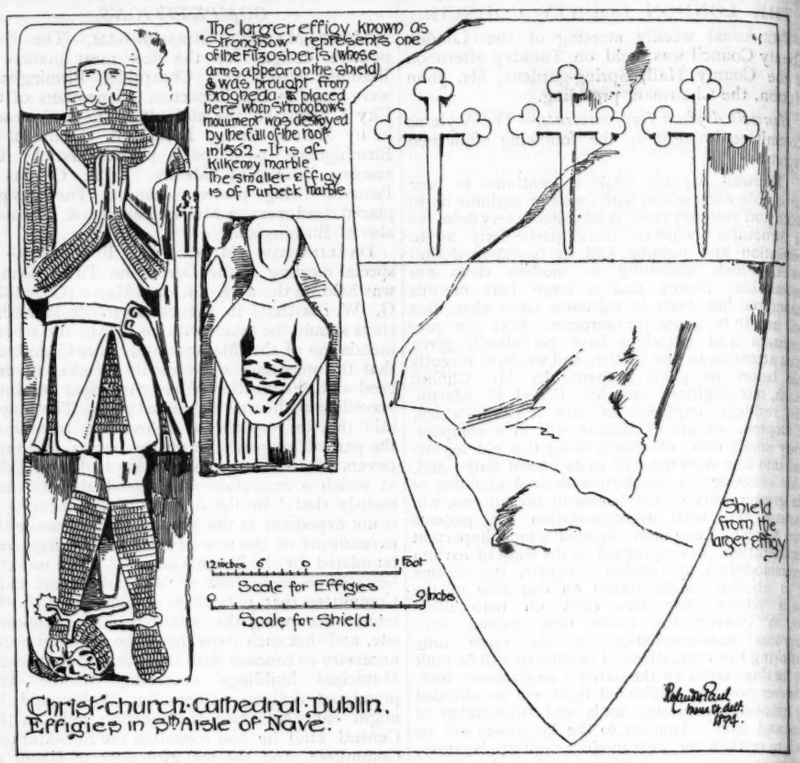
into the See of Dublin. John Comyn and Henry de Loundres (1190-1228) desired to supersede the ancient cathedral foundation which they found there with its native monastic and independent Chapter, at that time distasteful to all Anglo-Norman bishops. It was evidently their design that the old foundation, with its unruly community of Danes, Celts, and earlier Anglo-Norman adventurers, should die out; but it did not do so, and it maintains its existence as the metropolitan cathedral of the diocese of Dublin, with its distinctive Danish Constitution of 1038 to the present day.

St. Patrick's, if small things may be compared with great, is, like Salisbury, a church of one period. Its symmetrical plan and the ordinary Early English details of ancient work that survive are soon understood and its interest for the architectural student exhausted. Christchurch, on the other hand, with its more ancient origin and fuller records, its strange and unique plan, its evidence of *growth* through the centuries, and its elaborate and curious architectural details, is full of abounding surprises, and will arrest the interest of the student visitor longer than the greater and statelier sister church.

Christchurch of the Holy Trinity, as it should be properly called, has earliest interest in the fact that it is the only known church of Danish foundation in the kingdom, and that the rude Danish building is incorporated in it, and survives. Dublin was exclusively a stronghold of Danes for 300 years up to 1014, when a decisive battle at Clontarf, near Dublin, broke their power, and thenceforward their history is that the Scandinavian colonists merged gradually among the native population. The Christianised local king of Dublin, Sigtryg Silkbeard, and a Danish Bishop Donat founded a cathedral (*Christchurch* in Scandinavian speech) A.D. 1038. "Divers men coming out of England," says an obscure record of the Church, "found there certain *fornices sive voltæ*." This, read by the remaining church, means that the Anglo-Norman adventurers, Earl Pembroke, called Strongbow, and his south-west of England comrades in the first English invasion of Ireland, found Sitric's rude vaulted church in existence, as they did at Waterford a similar Danish church built by Sitric's cousin Harald, which survived until 1770. After long and careful study of various evidence, which could not be entered on in the compass of this article, the writer of it has the assured belief that in the rude crypt of Dublin Christchurch is found the complete and practically unaltered church of Sitric, save that the Anglo-Normans, finding it there a century and a-half later, removed the *voltæ*, introduced rows of intermediate piers up the centre of the nave and transepts, and re-vaulted it to form a level floor for the upper church which they built above it.

The plan is a peculiar one, and compared with one resembling it—that of the Cathedral of Trondhjem—seems to tend eastwards to a chapel, or *feretrium*, a depository for relics, a distinctive Scandinavian ecclesiastical taste borne out by the long store of Christchurch relics found in its records.

On lines of the ancient Church of Sitric, Strongbow, and the famous Celtic Archbishop St. Lawrence O'Toole, whom he found in the See of Dublin, proceeded to found a Transitional Norman Church, A.D. 1170; and what gives unique character to the plan is that it is a bold design conceived to stand on the old one; no other theory is possible to account for a queer plan, which is neither apsidal, nor yet square-ended, and yet a combination of both. Three square-ended Eastern chapels were built over those below, and towards the central one the sides of the choir tend with two short cants. Eastward of the choir, it should be understood, the upper Eastern chapels are a restoration of Mr. Street's above their foundations, but on ancient lines, with unmistakable evidence to go on—a re-building, conceived in the happiest abnegation of the spirit of Street; so inspired by the *genius loci* that by familiarity one ceases to regard these singularly beautiful chapels as modern work. Elsewhere throughout the interior of this church so much ancient work remains or the evidence on which it has been replaced so conservatively and conscientiously by Mr. Street was so definite, that now the most skilled analyst would fail to find where antiquity ends and restoration begins. In the modern furnishing and fitting of the church only is the hand of Street in evidence. Otherwise there is such a consistent and genuine restoration that the church can be studied with satisfaction (external features excepted) as a curious eleventh and twelfth century church of abounding interest. Its magnificent


The larger effigy known as "Strongbow" represents one of the Fitzosberts (whose arms appear on the shield) & was brought from Drogheda & placed here when Strongbow's monument was destroyed by the fall of the roof in 1562 - It is of Kilkenny marble
The smaller effigy is of Purbeck marble
12 inches 6 0 1 Foot
Scale for Effigies
9 Inches
Scale for Shield.
Shield from the larger effigy
Christ-church Cathedral Dublin.
Effigies in S.th Aisle of Nave.

floor alone, a good reproduction from the extensive patches of ancient tiling found by Mr. Street, is an unequalled example for study of what a grand scheme of pavement design may have been when such existed in perfection in the thirteenth century.

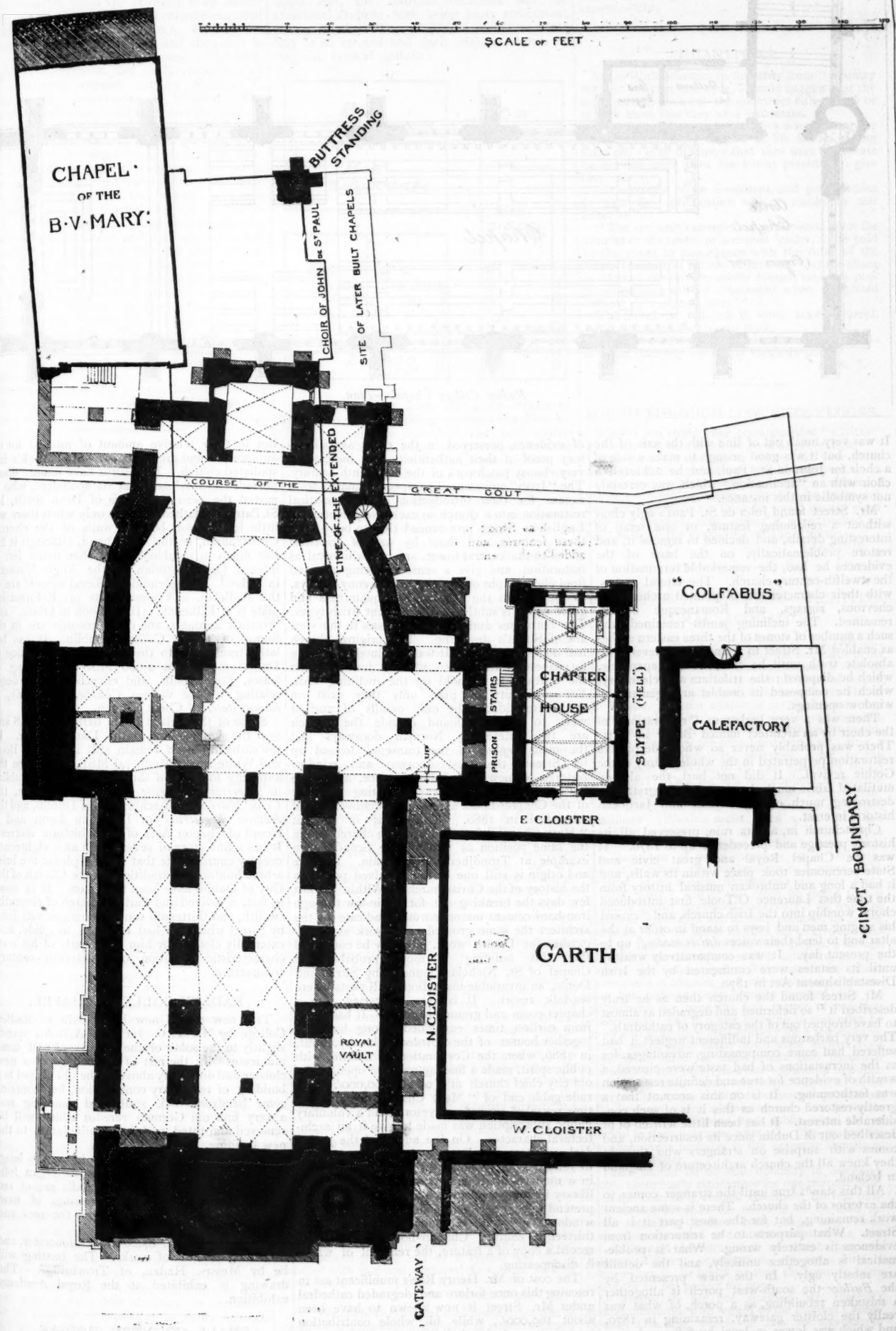
Strongbow, Raymond-le-Gros, and Fitzstephen coming out of South-west England and bringing over their countrymen builders from the school of Glastonbury and Wells, who left characteristic traces of their handiwork *en route* at St. David's, Valle-Crucis, Strata-Florida, &c., began this church. The powerful Celtic Bishop Lawrence, a man of culture and learning beyond his contemporary fellow countrymen, either took kindly to the improved style of architecture and church ordering of the English invaders or was prudent enough to see that fighting with them was a lost game in the long run. With apparent cordiality he joined them in the foundation of the new English church and let "the rest keep fighting." They built, as the Black Book of the cathedral records, the choir and aisles (*i.e.*, the transepts), and three chapels, one dedicated to St. Mary the White, one to St. Laud, and one to St. Edmund, king and martyr. There also stood near (it does not say, however, that these founders built it), a chapel dedicated to St. Laurence O'Toole. It is likely that the little chapel of the south transept, re-built by Mr. Street, was built subsequent to the canonization of St. Lawrence, and that Mr. Street's problematical restoration in twelfth-century dress is an anachronism.

The progress of raising the Anglo-Norman upper church on the Danish crypt was interrupted by the death of Archbishop Lawrence o' Tuathal, who left his see on a mission to Rome in 1179, and died at Auge or Eu, in Normandy, according to Ware, in 1180, where his memory is still perpetuated by a church dedicated to him. It was stated in the account of St. Patrick's that John Comyn and Henry de Loundres, his successors, let the building work at Christchurch and its Arroasian Canons severely alone, and it is evident that building was resumed under Archbishop Luke about 1230. The nave was then built in fully developed lancet style and with great refinement of detail and design. It is as evident, as in the original Transitional twelfth-century work of the choir and transepts, the builders came from the original Glastonbury school; the stone used is without doubt a Somersetshire oolite and the shafts freely used are Purbeck. A curious circumstance to be noted is that the stonework, when examined, for the most part resolves itself into uniform scantlings of 2 ft. by 1 ft. by 1 ft., while the hundreds of shaftlets of Purbeck used were of a uniform length of 16¼ in. each, and the mouldings seem to have been designed to suit the scantlings of the stones. It points to importation of seaborne "scantlings," as deals come to us now, which influenced the moulding and design of the work. For instance, the many-annuletted nook shafts are a distinctive feature of Chrischurch work, and, while peculiar and effective, they seem to indicate jambs made up of so many 16¼-in. lengths of Purbeck shafts, and so many annulettes, an annulette of like kind doing duty for a capital at the springing.

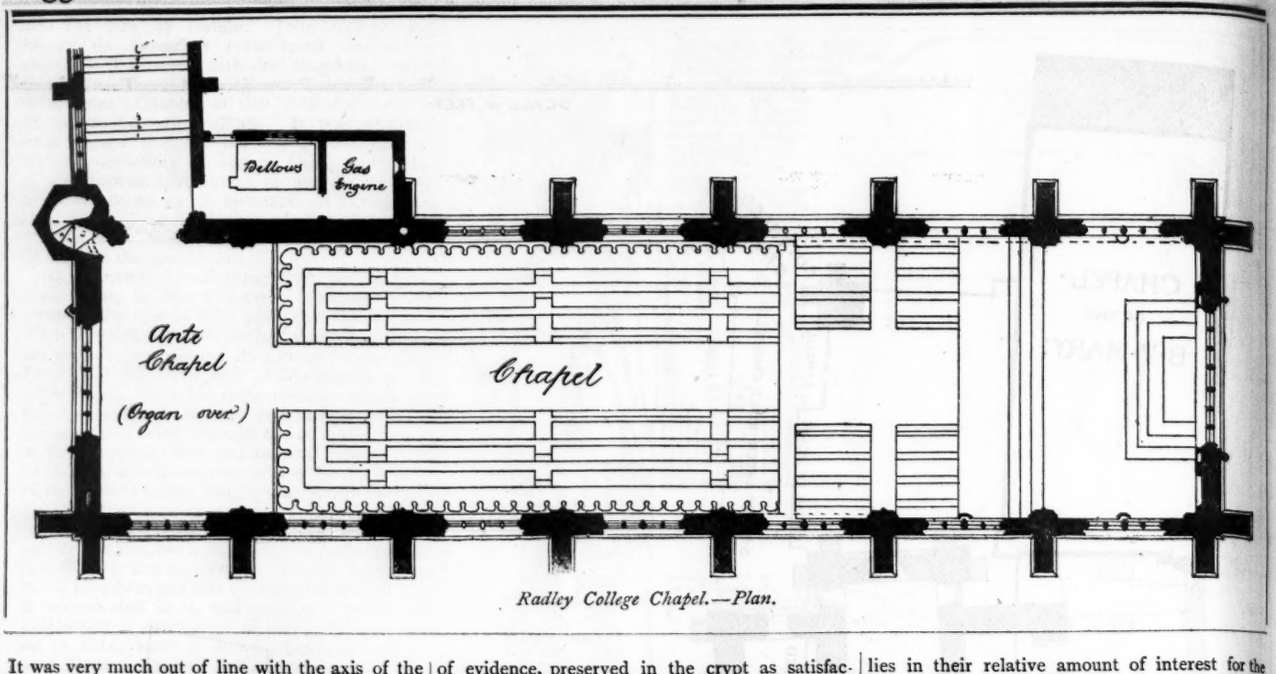
On September 18, 1235, the king granted leave to the Prior and brethren of the Holy Trinity to close up an ancient highway at the west end to lengthen their church. This satisfactorily dates the work. The westernmost arch and bay of the north side confirms the record. It is differently moulded and has no sculptured capitals—the skilful carvers who left so much cunning work in the Dublin Church had probably gone back to Somersetshire or Pembrokeshire. There is also no crypt below the western bay which was tacked on.

This beautiful work of the nave came to sad disaster by the "fall of the rofe and bodye of Christes Church" in Queen Elizabeth's time, as an inscription on the wall, by Sir Henry Sydney, the Lord Deputy, records; and in another inscription he states that "thys wall fel downe," which is more Irish than accurate. The church all stands over a peat bog. After heavy rains the bog slipped on the sloping hill-side. The groined roof fell in, thrusting out the north side of the triforium 2 ft., and ruining the south side. The *débris* of the roof lay there 3 ft. deep, and was flagged over, covering the ancient pavement, until Mr. Street cleared it out. Lord Henry Sydney built up the north side in a plain fashion of wall with but two arches in it, and propped up the north side with beams of massy oak. So it stood until the restoration begun in 1870. What Mr. Street had to work on was the north side, shaky, but all there, and on the south side Lord H. Sydney's wall, in which were embedded two of the shattered arcade piers. There was no manner of doubt left, or fancy to be exercised in restoration. He repaired and replaced only, leaving the nave nearly as satisfactory a complete and authentic specimen of interesting thirteenth century as could be found.

About 1360 another disaster befel Christchurch. John de St. Paul, a barbarous bishop, fired with rivalry of that other cathedral under his nose, as it were, just outside St. Nicholas' Gate, determined to enlarge his choir and have as many Arroasians of his to sing complines and matins as they had of seculars at the other place. He ruthlessly pulled down the quasi-apse and the chapels of Sancta Maria Alba, St. Laud, and St. Edmund to make a long choir. There stood to the north-east a detached chapel of the Blessed Virgin Mary, probably of Danish foundation, which exists still.



The Crypt, Christ Church, Dublin.



Radley College Chapel.—Plan.

It was very much out of line with the axis of the church, but it was good enough to make a side of a choir for John de St. Paul, and he achieved a choir with an "inclination" which was certainly not symbolic in this instance.

Mr. Street found John de St. Paul's ugly choir without a redeeming feature, or one scrap of interesting details, and decided to remove it, and restore problematically, on the basis of the evidences he had, the remarkable termination of the twelfth-century church. The lateral arches, with their characteristics of pointed arches, with chevrons, zigzags, and Romanesque details, remained. The inclining jambs remained, and such a number of stones of the three eastern arches as enabled Mr. Street to replace this chevet with absolute truth until he came to the spandrels, which he diapered; the triforium and clearstory, which he composed in doublet arrangements of window openings.

There was a very barbarous "restoration" of the choir by an architect named Baker in 1831. There was probably never so wholly despicable restoration perpetrated in the whole history of the Gothic revival. It did not hurt the already mutilated fabric much, but it is to be regretted as destroying much of Elizabethan and Jacobean historic interest.

Christchurch in, all its ruin, preserved all its historic prestige and precedence up to 1870. It was the Chapel Royal and great civic and State ceremonies took place within its walls, and it had a long and unbroken musical history from the time that Laurence O'Toole first introduced choral worship into the Irish church, and "caused his singing men and boys to stand in order at the altar and to lend their voices *dulces modos*," up to the present day. It was comparatively wealthy until its estates were confiscated by the Irish Disestablishment Act in 1870.

Mr. Street found the church then as he truly described it "so deformed and degraded as almost to have dropped out of the category of cathedrals." The very barbarous and indifferent neglect it had suffered had some compensating advantages, for as the incrustations of bad taste were cleared, a wealth of evidence for true and definite restoration was forthcoming. It is on this account that a greatly-restored church as this is is of such considerable interest. It has been little written of or described out of Dublin since its resurrection, and comes with surprise on strangers who thought they knew all the church architecture of England in Ireland.

All this stands true until the stranger comes to the exterior of the church. There is some ancient work remaining, but for the most part it is all Street. What purports to be restoration from evidences is entirely wrong. What is problematical is altogether unlikely, and the details are mostly ugly. In the view presented by the *Builder* the south-west porch is altogether a mistaken rebuilding, as a porch, of what was really the cloister gateway, remaining in 1870, and which was lower in level by 8 ft., and once leading to the crypt. The triplet clearstory windows, with ugly pyramidal and curved labels which do not fit the window arches, are a professed restoration, but the "found" window of evidence, preserved in the crypt as satisfactory proof of their authenticity, but indicates a very clumsy patchwork of the eighteenth century. The "Irish" embrasured parapets simulated want excuse for their introduction as problematical restoration into a church so exclusively exotic and English as Street pronounced this to be. Even these features, and those by way of Irishisms added to the central tower, are but whimsical as restoration, and give a sense of being adapted from photographs of Jerpoint or Kilkenny Abbeys, as they fail in the characteristic quaintness and grace which is subtle in the ancient Irish types. The buttresses and flying buttresses in the view are of Street's designing. The original church had no such features. It was absolutely necessary for structural reasons to add this innovation on the north side to hold up the inclining wall. For uniformity of plan only they exist on the south side. The only details of ancient work to be now found outside the church are two interesting Norman doorways and the main *corpora* of the transepts dressed up by Street, the west doorway and window restored all new on definite evidence, and some buttresses, and the very interesting remnant of the Chapter-house and cloister discovered and unearthed in 1886. The walls of ancient "Mary Chapel," detached from the church and in the same position as that of the Scandinavian example at Trondjhem, still remain. Its date and origin is still one of the unsolved points in the history of the Christchurch. Within the last few days the breaking out for a window through iron-hard cement masonry would indicate to the architect the same grouted rude work as distinguishes the Danish work. It may be conceived that this building is more probably the Chapel of St. Nicholas, founded by Sitric and Donat, an invariable institution at all ports where sea-folk resort. It is now converted into a chapter-room and grammar-school. It had been from earliest times embedded among huddled-together houses of the crowded little city, until, in 1886, when the Corporation of Dublin, with public spirit, made a fine approach to open up the old city chief church at a cost of 100,000*l.* The rude gable end of "Mary Chapel" for the first time revealed, proved an eyesore, and a voluntary public subscription was made to give it an architectural character. On the advice of the cathedral architect the Dean and Chapter resolved to refrain from rebuilding the ancient east end in a modern dress, and to mask it by a small library building which was a necessity, and did not pretend to be other than modern. The triplet east window is a careful reproduction of that of the thirteenth-century Chapter-house, placing on record a copy of a feature, the remnant of which is disappearing.

The cost of Mr. Henry Roe's munificent act in rescuing this once forlorn and degraded cathedral under Mr. Street is now known to have been about 160,000*l.*, while his whole contribution towards its revival in building a synod-house and securing an endowment for it after the ruin of its fortunes by the Irish Church Act of 1869, amounted to 220,000*l.*

A further contrast between the two cathedrals lies in their relative amount of interest for the antiquarian and archæologist. St. Patrick's is a spoliated church. Its records have mainly disappeared, and it is plain that its spoliators, who so moved the *sæva indignatio* of Dean Swift, left St. Patrick's Cathedral alone only when there was little left to rob but the walls of the church. Christchurch, on the other hand, although it has lost much in troublous times, has much left of interest for a historian of the Anglo-Normans in Ireland. Its splendid Mediæval missals are at the Bodleian, and some of its pre-Reformation plate is at Kilkenny. Its "Book of Obits," and proctor's accounts, and other records are in the library of Trinity College, Dublin. It has but lately transferred to the Public Record Office in Dublin more than 2,000 MSS., consisting of leases, Pope's bulls, and encyclicals, and deeds relating to the various *Chartæ, priviligiæ, et immunitates* of Christ Church.

Some of the earliest MSS. date from 1038 and bear the sign manual of the Danish Sitric. In the cathedral itself remain still its Black Book and White Book, Mediæval MSS. which are the authority for most of the civic history of Dublin, its *Repertorium Viride* of Archbishop Alan, the *Crede Milri* of the Archbishops of Dublin, and the *Novum Registrum* of Dr. John Lyon and a record of Chapter Acts of some historic interest. It has a fine store of seventeenth and eighteenth century church plate that would please the bric-à-brac hunter. Its traditions as the Church of the City of Dublin have been unbroken. It is now, in fact, a revived and curious church of eleventh, twelfth, and thirteenth century creation well done by Street where he had evidence to guide, and externally clothed by him in a garb of his own characteristic evolution of nineteenth-century architecture.

RADLEY COLLEGE CHAPEL.

THE new chapel now being built at Radley College by Mr. T. G. Jackson, A.R.A., stands slightly to the south of the old chapel and communicates with the rest of the college by a new cloister and dormitory above. The old chapel is a building of temporary construction, but contains some handsome oak stalls and panelling and a very fine old German reredos which will be removed and fitted with some adaptation to the new building.

The new chapel is 32 ft. wide by 130 ft. long, including an ante-chapel under the organ loft, and 40 ft. to the plate. The walls are of red brick inside and out with dressings of hard Doulting and Weldon stone, and the roof and ceiling will be of oak.

The builder is Mr. Estcourt, of Gloucester, and Mr. Long is clerk of works. The heating will be by Messrs. Haden, of Trowbridge. The drawing is exhibited at the Royal Academy exhibition.

SMALL COUNTRY HOUSES.

THIS sheet of drawings shows houses and other buildings that have been erected during the past year. All are simple and unpretentious. Business premises at Waltham Cross, for Messrs.

King & Scarborough, with dwelling-houses over, show a variation upon the ordinary town street-front. The building has been entirely executed by Messrs. King & Scarborough, without the intervention of the contractor, and the result is most satisfactory. The houses, Highfield, Chalgrove, The Haven, and St. Keverne have all been excellently carried out by Messrs. T. Turner & Co., contractors, of Watford. The material in each case is red brick and tile, timbering being executed in oak, the face oiled. St. Keverne is a large family house, with ten bedrooms, besides dressing-rooms. Stables at Oakhurst are entirely built of concrete; the walls, 12 in. thick, rough-cast externally. Mr. Seth Grist, of Aylesbury, was the builder, who also has just completed Sundial Cottage at Northwood, a brick building covered with rough-cast, containing studio, dining and drawing-rooms, and six bedrooms. Economy was the chief desideratum here, and endeavour has therefore been made to treat the building in the simplest possible way, all the bedrooms being planned in the roof.

The house "Bowls," at Great Stanmore, is being erected by Messrs. McCormick & Sons, of Canonbury, London. The metal-work is by Messrs. de Grelle Houdret, of London Wall. The materials are red brick and tile, and oak timbering.

The drawing is in the present Royal Academy exhibition.

ARNOLD MITCHELL.

Correspondence.

To the Editor of THE BUILDER.

CHURCH OF ST. JOHN, DAMASCUS.

SIR,—I am quite content to leave the question as suggested by Mr. Spiers, and I look forward with much interest to the result of his study of the ancient temple precincts. As to the church, the impression with which I began—that if the centre block of the mosque is not formed by the old church, then no part of the structure can, with the evidence now before us, be claimed as of Christian building—has become conviction. That, I believe, forms the alternative.

I will not now raise any fresh points, and answer in the briefest way those of Mr. Spiers' last letter.

It is, of course, possible that the roofs of wings have been renewed to a steeper pitch.

Photographs of the interior show that both wings have similar dosserets.

There was certainly a "reason why" the crossing did not form a square. There would be such a reason in the wish to make the church wide as compared to the length, and I gave the Isaurian Church as a direct parallel.

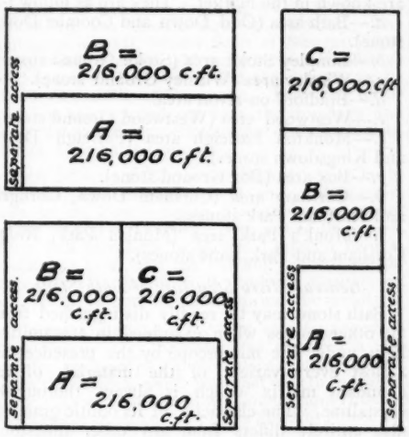
"In Arcadius' time workmen were not capable of throwing arches of 45 ft. span." It seems to me a faulty inference that because Constantine, in the hurry of preparing his new capital, does not appear to have left any large churches at Constantinople which satisfied the "vaulting" ambition of Justinian, that therefore Arcadius was not capable of building in any part of the empire arches as great as those erected in Rome, Constantine's civil basilica and St. Paul's outside the walls being examples. As for domed coverings, St. George at Salonica furnishes an instance. Timidity in arched construction might be expected of those who built the Dome of the Rock.

My dimensions of Bethlehem were taken from those given in the Palestine Memoirs.

W. R. LETHABY.

LONDON STREETS AND BUILDINGS BILL.

SIR,—Amongst other points in which this Bill will, if unaltered, have not only a serious confiscatory effect, but prove also extremely prejudicial to the erection of buildings where large and open floor area is required, I have not yet seen attention directed to the omission of any equivalent of Section 3, of Clause 27 (Part I.), of the M.B. Act, 1855. This, read with Sections 2 and 1 of the same clause, provides that *any building* (specifically distinct from chambers or dwelling-rooms) in one occupation and divided into different tenements, *with independent staircases or entrances*, shall be deemed to consist of so many *separate buildings*, for the purposes of the Act, and be divided accordingly, *both horizontally and vertically*; but no one such tenement or building must exceed 216,000 cubic feet. Thus, a tenement of 216,000 cubic feet may, with a separate entrance, be superposed on another tenement of equal size, the staircase enclosure and the horizontal division both being party structures; or any number (theoretically) of such tenements may be so erected and dealt with, as shown in diagram, vertical sections:



All the dividing lines are party structures. There is no corresponding provision in Part V., Clause 61, of the new Bill, the only matter specially dealt with being the provisions relating to chambers. The simple limitation remains—or is proposed to remain—that no building of the warehouse class shall contain more than 216,000 cubic feet unless divided by *party walls*, *i.e.*, vertical divisions, subject only to the special application under Clause 63, which, with its restrictions, will be practically inoperative.

PERCY W. BRITTON.

THE HEATING AND VENTILATION OF THE HOUSES OF PARLIAMENT.

SIR,—While appreciating as I do your healthy criticism of my report on the above-named subject, I would point out that you have apparently fallen into quite a natural enough error in supposing that the vitiated air passes off from the ceiling of the House of Commons directly into the main extraction upcast shaft in the Clock Tower at or about the same level as that of the vitiated air chamber in the roof of the Debating Chamber.

If you will again go more carefully over the Report and study the transverse section you will find that the vitiated air, let off at the ceiling, has again to be mainly dragged vertically downwards, the whole height or depth of the Debating Chamber and the three basements underneath it, before it is drawn horizontally along the lower basement to the Clock Tower upcast shaft. Bearing this in mind, you will, I am sure, at once see that the proposed new horizontal extraction-shafts under the side galleries—being connected to the vertical downcast shafts proceeding from the ceiling-vitiated air-chamber to the main horizontal extraction shaft in lower basement—would have a very much stronger *pull* than could possibly be the case at the ceiling, for the very reasons you give—viz., that the distance from the proposed new extract shafts, under side galleries to the basement, would be so much shorter and more direct in every way, and consequently there would be very much less friction. Your reference, therefore, to what you call my "rather curious and unscientific proposal" is scarcely fair, and could only have been made thoughtlessly, in the actual circumstances, seeing it would really be much easier for the vitiated air to be drawn off under the side galleries, in the manner I show in green on the sketch, than it would be to do so—with the re-arrangement of upper outlets proposed—at the ceiling. Inlets under the side galleries already in a manner exist or have been tried, and they have not answered, nor can they ever answer, the purpose under the present peculiar conditions.

I never yet knew of a system of propulsion pure and simple, that effected an efficient and satisfactory ventilation of any large building. In the case of the House of Commons there is no lack of *fresh* air sent in, or that can be sent in; the trouble is rather to get rid of *all* the vitiated air, and that can only be done effectively by a proper system of extraction, by which the vitiated atmosphere would be drawn out from various points, and by a system that can be handled with ease and arranged to suit all seasons of the year.

JAMES KEITH,
Assoc. M. Inst. C.E.

*** We did not notice that the lower extract was to go direct into the *downcast* shaft; of course we know there is one. But that is only reversing the position; the question then will be, why should the air go to the top? It will at all events need very careful adjustment to balance the two extracts so that one shall not act against the other. We are still of opinion that inlet at that point was the true method, and Mr. Keith has given no reason why it should not answer.—ED.

QUANTITIES.

SIR,—With reference to the letter from "Country Builder" in your last issue, I would suggest that the architect who took out the quantities either knew or did not know that they were inaccurate.

If he did not know whether they were accurate or not, he is not fairly entitled to his fee for taking them off. If he did know that they were inaccurate he deserves more than the law at present will give him.

But he ought to be consistent, and get his client to sign the specification with a clause to this effect:—

"The architect's charges are 5 per cent. upon the amount of the lowest or accepted tender, to be paid by the client in accordance with the rules of the Royal Institute of British Architects, and the client is allowed ten days to satisfy himself that the proposed building will be substantial when completed and for . . . . years after."

The moral for builders is, never take an architect's quantities for his own work.

Conduct on the part of any architect such as this is worse than any amount of furniture polish.

F. S. J.

SOUND THROUGH CONCRETE FLOORS.

SIR,—I am afraid your correspondent "Civitas" will learn that cure is not so good as prevention.

It is probably too late to render his floor quite sound-proof, though matters may be improved.

The cheapest plan would be to put a cushion of felt or india-rubber between the wooden joists and the concrete. I do not think he would do any good with the sawdust plan, unless it were packed so tight as to lift the wood floor off the concrete.

SILENTIUM.

THE COUNCIL CHAMBER—ARCHITECTURAL ACOUSTICS.

SIR,—As reported in your issue of the 14th ult., Mr. Blashill, in his reply following the discussion of his interesting paper "The Council Chamber and its accessories," said: "There were all kinds of fancies about sound. In the case of the new Opera House at Vienna, where a couple of architects were employed, the Press and a certain portion of the public were unanimous in saying that, although the building was a fine one, the sound was bad; yet, after a few more performances, everyone came to the opinion that it was one of the best places for sound in Europe!" This, Sir, is a very common experience in respect of new buildings. Professor Roger Smith, in his useful little work, "The Acoustics of Public Buildings" (Weale's series), now a little old and requiring to be written "up to date," says: "It is desirable that the architect should be aware that the dampness of walls conduces to a very considerable extent to reverberation in a room. Dr. Hutton gives several illustrations of this fact; *(Math. Dict.)*, and it will often be found that a building hastily completed (especially if its walls be plastered internally), and at once occupied for public purposes, will for some months fail to give satisfaction to the extent that has been hoped, although ultimately, as the walls lose their moisture, acoustic defects will disappear. The cause of these phenomena is obscure, and no satisfactory explanation has hitherto been brought forward, but the phenomena are none the less matter of common observation; and in a new building it may often be as well to hang up a little drapery for a few months, which can be safely taken down when all gets quite dry." We have for many years paid particular attention to this point, and our experience in public halls of all sizes—some very large, others, as small vestry halls, of very modest dimensions—quite agrees with Professor Smith's observations. It is probable that the Viennese press and public were not so fanciful in their judgment after all. The reason for the phenomena probably is the excessive density of the damp plaster.

There should be no real difficulty in designing rooms acoustically satisfactory for one purpose only, as in the case of a council chamber; the real difficulty comes in when the room is to be used for public speaking before both large and small audiences, for vocal and instrumental music, and for balls and bazaars, each of which purposes suggests different construction, yet some kind of average has to be struck so that the room is fairly useful for all but perfect for none.

Of course we are not ignoring Mr. Blashill's special difficulties with regard to the London County Council Chamber which he has so successfully surmounted, and in which he was hampered by having to incorporate the older Chamber not originally built by him.

A. & C HARSTON.

April 25, 1894.

DESIGN FOR WALL PAPER.

SIR,—Mr. Gwatkin in his description of a design of wall paper in last week's *Builder*, omitted to mention that the joint to which he referred had been patented by us. We think it only fair that this should be known.

For some time past we have executed a number of Mr. Gwatkin's and other artists' designs in water colours by this process, and the result is as successful as he describes. HAYWARD & SON.

BOILER EXPLOSIONS.

SIR,—I sympathise with Mr. F. E. Jones' regret at detailed particulars of hot-water supplies not having been given where accidents have occurred owing to frost. I expected ere this to have seen such particulars published of the unfortunate explosion last winter in Blythswood-square, Glasgow, where the bursting of the kitchen boiler was the cause of death and injury to several persons, but as yet I have heard of no report being published, although an examination was ordered to be made by an engineer. Perhaps some other Glasgow readers of the *Builder* may be able to give information as to this?

Mr. Jones' statement that "water freezes from the top downwards" may be true, but so is the other fact true that I mentioned, that warm water is inclined to rise to the top, my argument being that if the expansion or blow-pipe be put in with a rise upwards in *all* its course, there will be little or no danger of the expansion-pipe from off the top of the hot-water tank of a kitchen boiler freezing, if the said pipe is properly put in, and especially if it is wrapped round with felt, as it should be.

In the case Mr. Jones mentions of the expansion-pipe being thrust up through the slates at a lower level than the water in the pipe, that is simply an example of the plumbers', or quasi-plumbers' ignorance, and affords another proof of the necessity for the Registration of Plumbers' Bill. Mr. Jones does not give us his explanation of why his hot-water pipe he writes about burst immediately above the cylinder. When asking information from others he should have explained his own case.

I do not understand how the "secondary return" can be referred to as "a pipe full of water to be emptied before you get to the hot." The "secondary return" is put in so that hot water may be got immediately.

We have inferior plumbers' work just as we have inferior mechanical engineering work. In both experience has caused improved methods to get improved results, but if these improved methods are ignored, unsatisfactory results follow equally in both cases. W. P. BUCHAN.

Glasgow, April 30.

ADMIRALTY EXTENSION BUILDINGS.

SIR,—Having read the correspondence in the *Builder* about the wages paid to the men engaged on the heating work at the Admiralty Extension Buildings, I beg to be allowed to state that the men under me are perfectly satisfied with the conditions of employment, as we are paid at a higher rate than is usual in our trade, and only wish to be left alone. The actual wage, including dinner-hour, which is paid, equals for fitters 10½d. and for labourers 6¾d. per hour. We do not attend the shop either morning or evening, and the working hours are from seven till one and two to five p.m., including an allowance of ten minutes I myself make for lunch-time. F. EDMEAD,
Foreman.

*** We cannot publish further letters on this matter.—ED.

The Student's Column.

THE STRUCTURE AND PHYSICAL PROPERTIES OF BUILDING STONES.—XVIII.

6. THE BATH DISTRICT.

THE material known generically as Bath stone comes from several places miles distant from each other, and from a much larger area than most architects are aware of. It is true that some quarries are exploited on the high ground to the south of Bath, and it is also a fact that from the historical point of view many edifices were erected of the stone from the immediate vicinity of the city. But the area wherein the Bath stone of to-day is raised extends to Box and Corsham on the north-east, Monkton Farleigh on the east, and Bradford-on-Avon to the south-east—many miles from the centre whence the stone was originally obtained. Practically all the quarries are mines, except some on Odd Down, Coombe Down, and at Winsley.

We shall not attempt in this place to give a detailed description of the quarries. All we now purpose to do is to describe the micro-structure of all the known varieties of the material.

We have divided the Bath district into several areas, corresponding as nearly as may be with the names by which the different kinds of stone are known in the market. They are as follow:—

a.—Bath area (Odd Down and Coombe Down stone).

b.—Limpley Stoke area (Stoke Ground stone).

c.—Winsley area (Winsley Ground stone).

d.—Bradford-on-Avon area.

e.—Westwood area (Westwood Ground stone).

f.—Monkton Farleigh area (Farleigh Down and Kingsdown stones).

g.—Box area (Box Ground stone).

h.—Corsham area (Corsham Down, Corngrit and Hartham Park stones).

i.—Monk's Park area (Monk's Park, Ridge Corsham and Park Lane stones).

General Micro-Structure of Bath Stone.

Bath stone may be readily distinguished from all other oolites when examined in transmitted light under the microscope by the presence, in almost every variety of the material, of an abundant matrix which is always thoroughly crystalline. The character of its oolitic granules also entirely differs from any other limestone we have hitherto described. Speaking generally, the intimate structure of these granules is remarkably clear, much more distinct than in the Purbeck-Portland, true Portland, or Chilmark stones. Contrasting them with Portland Whitbed, for example, they lack that hazy semi-crystalline aspect so characteristic of the latter; the nuclei in all cases are well defined, the concentric rings or successive coatings being seen to perfection in the Bath stone. The granules of the latter are always much larger, and instead of being joined together by a mere film of calcite with local patches of matrix as in the Portland stone, they are literally flooded with matrix, and frequently do not adhere to each other at all. But, whilst the oolitic granules are clearer than in the Dorset stones referred to, they are by no means as hard or crystalline. Indeed, in the majority of Bath stones, they have barely passed out of the earthy condition. In grinding sections of certain of these Bath stones for micro-examination, the granules were found to be so soft that the mere act of preparation reduces them to a state of powder, and they entirely disappear, leaving circular or ovoid holes, which may be clearly traced in the harder matrix.

At the same time, we have discovered that in certain Bath stone areas the oolitic granules have been removed by the solvent action of acidulated water in percolating the material underground. Thus the circular and ovoid holes may also be indigenous to the material. Now this peculiarity does not appertain to any other of the oolites used for building purposes in England that we know of, with the exception of that quarried at Minchinhampton Common, between Cirencester and Stroud, and which will be referred to in detail in the next article of this series.

Very few Bath stones are true oolites, though they have served as types of that structure for generations. It is true that they all, with the exception of certain beds at Westwood, possess excellently formed oolitic granules; but these latter are interspersed by such a large quantity of the remains of mollusca, echinodermata, bryozoa, &c., that it is no uncommon thing to find not more than one-fourth of the field of a microscopic view occupied by oolitic structure. This is not, strictly speaking, sufficient to cause it to be recognised as a true oolite in the same sense as the stone from Ball's Green, near Avening (Glos.), the "Brown" bed of Chilmark, or that from Ketton. We should term the Bath stones, as a class, shelly oolites having a tendency in certain localities to become shelly limestones without oolitic structure. Quartz grains (and indeed silica in any form) are conspicuous by their absence except in the quarries in the eastern portion of the district.

We have dwelt at some length on the general micro-structure of Bath stone because questions so frequently arise as to whether this or that building is made of Bath stone, or otherwise. Such a sentence as the following—"..... gateway, seventeenth century, said to be of Bath stone" frequently occurs in works on architectural subjects; or, "near by are the quarries from which the stone used in ..... Abbey was probably derived." The Commissioners appointed to inquire into the stone for building the Houses of Parliament would never have fallen into the fatal error of mistaking the material so well preserved in the Norman portions of Southwell Minster for that found at Bolsover, if the respective stones had been examined by aid of the microscope.

But we go farther than this with Bath stone. We have occasionally drawn attention to the fact that stones found over a wide area are specially liable to considerable variation in structure and in quality, and to no district is this observation more applicable than to Bath. We know full well that the stone as a whole does not bear a remarkably good reputation for its enduring qualities. If the "jerry-builder" is desirous of putting up an "eligible suburban residence" he generally uses Bath stone, for the simple reason that it is more cheaply converted than any other freestone in the market; whilst its cream tint and uniformity are other points in its favour. The architect, however, must not imagine that all Bath stones are of inferior quality. We have no hesitation in saying, from a very careful examination of all the quarries (save two minor ones) in the district, that the stone from certain workings we could name is as durable as any other freestone at present in the market. The differences between the good Bath stone and the bad can best be discovered by aid of the microscope, and we have deemed this matter so important that we have had prepared no less than fifty-two micro-sections, cut from samples obtained during our visit, for the purposes of investigation. We cannot, of course, describe each of these stones in detail, but the illustrations to be given next week, together with descriptions of typical samples, will serve for the student to fully comprehend our meaning.

Now, as to how much the micro-structure of the material tells us in regard to its relative durability. It has been laid down by all previous writers on the subject that an oolite possessing a crystalline matrix (*i.e.*, where the granules and shell fragments are cemented together by crystalline calcite) is much more capable of withstanding the action of the weather than one in which the matrix is imperfectly developed. That is an axiom, however, which turns out to be entirely erroneous when the facts are investigated, and in no building stone is this more patent than in Bath stone. For a thoroughly crystalline matrix, and more abundantly developed, could not be imagined than exists in practically all varieties of that material, whether the better, or the inferior kinds.

The weathering of the poorer kinds of Bath stone is due in some measure to their comparatively earthy-looking oolitic granules, which are easily picked out by the weather; but the primary cause is the frequency and openness of the lamellæ of the crystalline carbonate of lime matrix; whilst the latter is often permeated with minute cracks, and is frequently granular. Nevertheless, the matrix in these inferior stones is always more durable than the oolitic granules. In the quarries, the student will sometimes find pieces of stone completely honeycombed by the removal of the granules, the sole remaining portion being the matrix. In the better descriptions of Bath stone the granules are semi-crystalline, and are as lasting as the matrix, whilst the latter has fewer open cleavage planes; moreover, the constituent particles interlock with each other. In bulk, the superior kinds will also be seen to possess lines or planes of calcite running in various directions, but mostly at right-angles to the bed, and the material is hard and compact. It may be stated that in no case which has come under our notice are the oolitic granules of Bath stone as crystalline in their optical effects as in the Portland Whitbed, and they have not been subjected to much, if any, secondary alteration, or re-cementation.

The transition in structure from the poorer to the superior Bath stones is exceedingly gradual, and many fairly durable materials are to be found occupying the intermediate position.

From what has been said, the student will gather that although there are many differential elements in the various stones, the general structure is essentially the same. We may now enumerate a few of the more prominent features which serve to distinguish one kind of Bath stone from another, analysing each component part:—

Oolitic granules.—Always distinct and well-formed. Nuclei may consist of a fragment of shell; in some, small and insignificant, in others large and controlling the ultimate shape of the granule; some "nuclei" have one thin coating only. Occasionally three or more fragments already partially coated are rolled into one, and the whole enveloped by thick calcite layers. Very rarely the nuclei consist of quartz grains. The concentric coatings are sometimes amorphous, and are successively overlaid by a lighter and more crystalline layer. In the

earthy granules minute cracks radiate from the centre to the circumference. The regularity in shape is also a point to be noted, as well as the proximity of the granules to each other. Special attention should be paid to those which adhere, and the nature of the adhesive mineral must always be carefully ascertained. In some Bath stones the granules are light brown in tint; in others the matrix is spotted with iron stains, or the ferruginous markings are observed to follow a set plan. In certain varieties the granules are tolerably regular and uniform in size, or the reverse may be the case, and extremely small ones be developed in juxtaposition to abnormally large ones.

Organic Remains.—Always present in greater or less quantity. In some varieties of the stone the punctated remains of echinoderms, or sea-urchins, are very abundant; but the commonest constituents are pieces of the shells of mollusca, occasionally composed of that unstable mineral, aragonite. Pieces of bryozoa are also rather common in certain kinds, and may be readily distinguished by their characteristic cellular structure and ornate appearance. The comparative size of the organic fragments is also a differentiating feature. Some of them are highly decomposed, and in an earthy condition, whilst others have all the clear transparency indicative of a high state of preservation and crystallisation.

The Matrix.—Always a crystalline form of carbonate of lime, mostly very abundant and filling up all pores of the stone. Sometimes massive, with well-formed cleavage lines; but very frequently granulated and much broken up. Other characters of the matrix have been alluded to in the course of the preceding remarks.

If the student will now carefully note which of these peculiarities occur in any one Bath stone, he soon becomes aware that they are constant in that stone, and are never found similarly associated in other varieties of the stone. In other words, the divers kinds of Bath stone may be distinguished one from the other by the grouping together of definite sets of structural characters, which can only be determined by microscopic analysis.

OBITUARY.

MR. ROBERT ALLEN YERBURY.—The senior partner of R. A. Yerbury & Sons, of Kilburn, died on Sunday last, at his residence, St. Margaret's Lodge, Kilburn, aged seventy-four. Mr. Yerbury commenced business at Kilburn in 1842, and was one of the pioneers of the building operations which have made the Kilburn of to-day. During the long period of fifty years he carried on his business so as to earn a reputation for good workmanship and business rectitude. His works commenced upon the Cotton estate, and include many important private and public buildings, among which may be mentioned St. Mary's Convalescent Home, Broadstairs; Orphanage of Mercy, Kilburn; Queen Victoria Orphanage, Paddington; Gordon Memorial Schools, Kilburn; Princess Fredericka Schools, Willesden; Wilberforce Schools, Chelsea; Cottage Hospital, Rotherhithe, &c.

GENERAL BUILDING NEWS.

NEW CHURCH, SLEIGHTS, NEAR WHITBY.—The ceremony of turning the first sod in connexion with building a new church (St. John the Evangelist) for Sleights, near Whitby, was performed on the 25th ult. by Mrs. Walker. The estimated total cost of the new edifice is about 3,000*l.* Mr. Christian, of Whitehall-place, London, is the architect; and Messrs. Padbury & Sons, Scarborough, the contractors.

PREMISES, SWANSEA.—A contract has been entered into with Mr. David Jenkins, contractor, Swansea, for the erection of new business premises next to the Mackworth Hotel, Wind-street. The proposed new premises in Wind-street, so far as the elevation is concerned, will be of Bath stone and Forest of Dean blue stone, in alternate courses. The ground-floor will be occupied by the Capital and Counties Bank, Limited. In the attics will be provided rooms and offices for the caretaker, while lavatories will be erected on each floor. There will be separate coal-cellars for each block of offices. The architects are Messrs. J. P. Jones, Rowlands, & Margrave, Swansea.

HOTEL, NEWCASTLE.—A block of buildings which bear the name of the Eldon Buildings have been erected at the north-east corner of Grey-street, Newcastle, in place of the old Eldon. It consists of basement to be fitted up as a grill; on the ground floor is a restaurant occupying the back, the front portion being let as shops. The large billiard room, 52 ft. by 18 ft., is on the first floor, and above this are suites of offices. The kitchens are situated on the third floor, from which a goods lift communicates with all the floors. Externally the building is of dressed ashlar in a Classic style, in keeping with the rest of the buildings in Grey-street, and is 64 ft. in height. The front is divided by composite pilasters, with round-headed windows to the first floor and wrought iron balconies to them. The building is lighted by the electric light throughout. The contractor was Mr. Walter Scott of Newcastle, the wrought-iron work being done by Messrs. Bainbridge & Crimson, of Gateshead, and the decoration by Mr. G. G. Laidler, of Newcastle. The whole of the work has been carried out from the drawings and under the personal superintendence of the architects, Messrs. Oliver and Leeson.

NEW SUNDAY SCHOOLS AT STOCKTON.—On the 26th ult., new Sunday school and parish room, built for St. Peter's parish, Stockton, were opened by the Bishop of Durham. The cost of the school, which has been built by Messrs. Craggs & Benson, is about 1,150*l.*, and the building consists of one large room 80 ft. by 34 ft., and six class-rooms. Mr. W. H. Linton, of Stockton, was the architect.

PROPOSED PEOPLE'S PALACE FOR GLASGOW.—The Glasgow City Engineer has prepared a plan for the proposed People's Palace on the Green. From the designs, which have met with the approval of the committee of the Town Council appointed to consider the question, it appears that the Palace will consist of a front building, containing two large reading-rooms, a museum, and a picture gallery; and at the back there will be a glass-covered winter garden. A site has been secured to the south-east of Greenhead Baths, and the principal front will face the London-street entrance to the Green. The total cost is estimated at 19,000*l.*

NEW CHURCH, WEDNESBURY.—A new church has been erected in the King's Hill district, Wednesbury, by Messrs. Hammond, of Darlaston, from designs prepared by Mr. C. W. D. Joynson, the total cost being about 1,800*l.* The building will seat about 400 persons. It is a red brick structure with stone facings, the whole of the seating accommodation being in the nave. In addition, there is a chancel, organ chamber, clergy and choir vestries, and an arcaded vestibule.

PROPOSED RESTORATION OF CHRIST CHURCH, HALIFAX.—At a recent meeting of churchwardens and sidesmen the plans prepared by Messrs. Horsfall & Williams, architects, Halifax, for the restoration and addition to Christ Church, were taken into consideration. They comprise the following works:—The remodelling of the west end of the church and providing improved access to gallery by the erection of two outside and independent staircases and vestries; the opening out of ante-church vestibule, and throwing the same into the nave, thus providing additional accommodation; the providing of better and more appropriate position for font; the present doorway opening directly into the nave at the south-east corner of same to be permanently closed, and a window inserted; the gallery at the west end to be remodelled, and sitting provided on the curve instead of massed together at right angles as at present. Here will be also provided accommodation for Sunday scholars. Additional accommodation is to be provided for the choir by extending the choir-stalls, and reducing the space now occupied by the Communion. The heating is to be entirely overhauled, and a scheme of ventilation provided. The nave will be roofed by an open-timbered roof. The estimated outlay, including cost of organ, will be about 5,000*l.*

UNIONIST CLUB, TROON, AYR.—A new club is being erected in Templehill-street by the Unionists of Troon. The building has a frontage in Templehill-street of about 50 ft. On the lower story there is a line of five shops, and, in addition, premises, also on the street level, are to be occupied as the post office of the district. The reading-room, situated above the post office, is a circular apartment 30 ft. in diameter, and a billiard-room is provided. The main hall measures 79 ft. by 34 ft., and in rear of the principal building will be a bowling alley 83 ft. in length. The style of architecture is the Scottish Baronial, and Mr. Ingram, Kilmarnock, is architect.

POST OFFICE BUILDINGS, PONTYPRIDD.—A new post office has just been opened at Pontypridd. The new premises are centrally situated in Taff-street. The new building has a front elevation of red and white brick. The basement and ground floor cover an area of 48 ft. by 88 ft. Mr. Arthur O. Evans was the architect for the building.

ADDITIONS TO IDIOT ASYLUM, KNOWLE, BIRMINGHAM. — The Midland Counties Idiot Asylum at Knowle, near Birmingham, has recently been considerably enlarged from plans prepared by and under the superintendence of Mr. F. B. Osborn, architect, Bennett's Hill, Birmingham. The works have been carried out by Messrs. Barnsley & Sons, contractors, and consist of large central dining and recreation hall, new kitchen and scullery departments, dairy pantries, stores, &c., also four large dormitories, nurses' bed-rooms, linen rooms, and other necessary offices, committee rooms, secretary's office, and school-rooms on each side of the house.

SANITARY AND ENGINEERING NEWS.

DRAINAGE AND SEWAGE PURIFICATION, RIPON.—A special meeting of the Ripon City Council was held in committee on the 16th ult., the Mayor (Alderman Smith) in the chair, to receive the report of Mr. A. E. Preston, C.E., of Bradford, upon the proposed works of sewage purification, intercepting sewers, and new main sewers for the city. From the report it appears that the diversion of the sewage from the rivers Ure and Skell is the most pressing matter, and for this purpose it is necessary to provide intercepting sewers. It is proposed to converge the sewers on Fisher-green, a point about half-a-mile below the city, at the confluence of the rivers Skell and Ure, and to treat the sewage by intermittent filtration, for which twenty-five acres of land will be required. The estimate of the cost is (including land, 2,500*l.*) 17,700*l.* The scheme was afterwards adopted by the Council, for presentation to the Local Government Board.

NORTH BRIDGE, EDINBURGH.—A special meeting of the Edinburgh Town Council was held on the 25th ult. for the purpose of considering the draft agreement between the Corporation and the North British Railway Company regarding the new railway hotel, and the proposed new North Bridge. The principal points in the agreement are the proposal to construct a new North Bridge with a width of 75 ft. at a cost not exceeding 90,000*l.*, the erection by the company of a railway hotel between the Waverley steps and North Bridge-street, with a height of not more than 95 ft. above the level of Princes-street; the contribution by the company of 30,000*l.* towards the construction of the bridge, and the redemption at twenty-six years' purchase of a rent of 125*l.* per annum paid by the company to the Corporation for subjects within the area of the Waverley station. The Lord Provost having explained the agreement, moved that the Council approve of the committee's report, and approve generally of the draft agreement regarding the North Bridge and relative matters, and remit to the committee, with powers to have it finally adjusted with the railway company, executed and confirmed by Parliament, and to proceed with the North Bridge Improvement Bill. Treasurer M'Crae seconded. With regard to the height of the hotel, he thought 90 ft. should have been the extreme height sanctioned by the Corporation; but they must remember that in agreeing to the 95 ft. asked by the railway company they had got considerable concessions, the railway company now being not only willing to throw into the public pavement that part represented by the present area, but bound to put back the wall of their building 10 ft. further still. They would thus have an area which, although not open to the public, would be of advantage in apparently diminishing the height of the building in Princes-street. Mr. Kinloch Anderson contended that the rebuilding of the bridge, according to the evidence of Sir William Arrol, was premature, and moved that the agreement be disapproved. At this point it was agreed that the clauses of the agreement should be considered *seriatim*. This having been done, the amendment, which had been seconded by Mr. Brown, was withdrawn, and the motion became the unanimous finding of the Council. A deputation to London to support the Bill was appointed.

PROPOSED SEWAGE WORKS, RICHMOND.—A Local Government Board inquiry was held on the 26th ult., by Mr. Rienzi Walton, M.Inst.C.E., at the Board Room Main Drainage Works, Mortlake, with reference to an application by the Richmond Main Sewerage Board to borrow 7,500*l.* for additional works. The plans of the proposed works were explained by Mr. William Fairley, Assoc.M.Inst.C.E., F.G.S., the engineer, and include a triple expansion pumping engine, capable of pumping 12 million gallons in twenty-four hours, additional sludge-presses to be worked on a combined system of air-pressure and direct pumping, screening-chamber, outfall to river, storm overflows, and other works.

ELLAND DRAINAGE.—On Wednesday a Local Government inquiry was held by Colonel J. O. Hasted, R.E., into an application for powers to borrow 13,500*l.* for works of main drainage and sewage disposal, and 800*l.* for the purchase of land to be used as a rubbish tip. The estimated cost of the works relating to the sewage does not include land, twenty acres of which will be leased from the trustees of the Savile estate on favourable terms. Mr. Malcolm Paterson, M.Inst.C.E., explained the scheme. The drainage works include several hundred yards of cast-iron pipes to be laid in the bed of the river Calder, or suspended on brackets from the river wall, a syphon 132 ft. long under the same river, and another 75 ft. long under the Calder and Helble Canal. The sewers discharge at a single point by gravitation. The ordinary flow of sewage was estimated at 75 galls. per head, including the whole of the trade refuse of Elland, which is an important woollen manufacturing district. Tanks for a population of 12,000 were designed, with a net capacity of 600,000 galls. After precipitation, which will probably be by lime, assisted by some other chemical agent, the effluent will be filtered through twelve acres of the land, which is well fitted in its nature, contour, and level, for the purpose,

being a sandy river alluvium, containing much ferruginous deposit. The inspector viewed the land and the lines of the three outfall sewers.

STAINED GLASS AND DECORATION.

WINDOW, ST. MARGARET'S CHURCH, ILKLEY.—A new stained-glass window was dedicated recently in St. Margaret's Church, Ilkley. The window has been inserted on the south side of the edifice, and has been designed by Sir E. Burne-Jones. There are four angels bearing musical instruments, with a background of diaper work, and the text "In heaven their angels do always behold my Father which is in heaven" is written on a scroll under the figures. The glasswork has been executed by Morris & Co., Merton Abbey, Surrey. The total cost of the window is 100*l.*

FOREIGN AND COLONIAL.

FRANCE.—The Conseil-Général of the Seine has approved of the project drawn up by M. Poussin (architect) for the construction at Fresnes-les-Rungis of a large Departmental prison to replace St. Mazas, Ste. Pélagie, and La Roquette.——The Conseil-Général of the Seine is at present discussing the building of a new hotel to accommodate the Prefect of the Seine and the administrative services of that department, which is at present housed in the Hôtel de Ville.——M. Moncel, "Maître des Resquestes" to the Council of State, has been appointed general secretary for the 1900 Exhibition.——The various sculptural groups in "staff" modelled by M. Fremiet and M. Falguière to decorate the fountain basin of the Trocadéro have become so disintegrated that it has been decided to remove them.——The death is announced at Paris, of M. L. H. Lefort, architect, and Member of the Conseil d'Hygiène of the arrondissement of Sens.——A large hospital is to be erected at Renazé with funds left for the purpose by a rich proprietor in the neighbourhood. M. Ridel, of the Department of Mayenne, is the architect.——The town of Vichy is going into extensive works of embellishment and sanitation at a cost of three million francs.——Extensive works are about to be undertaken at Nice for the improvement of the port, the completion of the Public Gardens, the construction of sewers in the Carabacel quarter, and the creation of an open air circus in the "Vallon des Fleurs." The total expenditure is estimated at about 1,200,000 francs.——At Châteauroux works at an outlay of 1,800,000 francs are to be entered on for the building of a hospital, a Hôtel de Ville, a Public Library, and a covered market.——Plans for the improvement of the port of Boulogne-sur-Mer have been definitely adopted, at a cost of 15 to 20 million francs.——The Lyons Exhibition was formally opened on Sunday last.

GERMANY.—The Emperor has nominated Professor Dr. Hans Muller Permanent Secretary of the Royal Academy of Art at Berlin. He is chiefly known as an authority on the History of Music, and was President of the German Commission at the Vienna International Music and Theatre Exhibition in 1892.——The Emperor has granted 5,000*l.* for the restoration of the Great Hall of the Caffarelli Palace, the German Embassy in Rome, and for its decoration with frescoes by Professor Prell.——The municipality of Berlin has granted 15,000*l.* towards the 1896 Industrial Exhibition on condition that the same amount be handed over to a charitable institution from any surplus there may be at the close of the show. The authorities offer the Treptow Park as the site. The supporters of the Lietzen Lake site declare it offers better and more agreeable communications with the city, and is in a wealthier quarter than the Treptow site, which is in the east end; moreover, the municipality of Charlottenburg will grant 7,500*l.* to the exhibition should the western site be chosen.——The German Fishery Society has decided to hold an exhibition in connexion with the Industrial Exhibition in 1896.——The Berlin Art Exhibition will contain a collection of this year's publications of the "Society for Etching." The place where Professor Siemering's model of the Philadelphia Washington Monument formerly stood will be occupied by a large equestrian statue of the Emperor William I., by Professor Hilger. Among the Arts and Crafts exhibits will be a room decorated by the Munich painter, Josef Rösl.——The rebuilding of the Marienkirche is so far completed that the opening ceremony is expected to take place in September. The new stained-glass windows, costing nearly 1,000*l.*, are shortly to be fixed.

DENMARK.—King Christian the other day made an inspection of the Marble Church, which is now rapidly approaching completion. The bells were tried for the first time. The work now remaining is entirely internal. The mosaic floor is finished and the heating apparatus has been approved, and the scaffolding, too, around the main entrance has been removed. It is expected that the church—or, rather, cathedral—will be consecrated at Whitsuntide. The present architects are Professor Meldahl, Crown Architect, and Herr Jensen, acting architect.——The designs for the huge dome to the vestibule of the Glyptothec, or new Art Gallery, in Copenhagen, have now been finished. They will be executed in terra-cotta.——An improvement has been made in the building regulations of Copenhagen with reference to kitchen sinks and the escape of noxious smells.——A new church is to be erected in the town of Skive. The cost will be 100,000 kr., a legacy left by a private individual.——The ancient "Cloister Church" at Horsens has been restored; the work, which was carried out by the State, has occupied six years, the architects being Professor Storck, the well-known antiquarian architect, and Herr Estrup.——The municipality of the city of Kallundborg has decided to provide new gas and waterworks at a cost of 200,000 kr.——The authorities of Ribe Cathedral, in Jutland, have purchased certain houses around the edifice, which are to be demolished, and the site laid out as gardens, in order to improve the aspect of the cathedral.——The death is announced, at the age of ninety-three, of Prof. Privy Councillor P. W. Forchhammer, the well-known Danish archæologist.——The excavation of the ruins of the old church at Grenaa has now been completed, and the authorities of the National Museum, Copenhagen, have decided to preserve the ruins, which show the complete plan of the edifice.——The work of restoring the ancient Castle of Vallö after the fire is rapidly progressing. The so-called "round" tower, which was cracked from top to bottom, has been repaired with cement and anchors, and the "square" tower is now in hand, The walls have been found far less solid than was at first supposed, and they have, in consequence, suffered greatly from the fire. The work is being carried out by the Crown architects.——Excavations have been effected by the National Museum of the ruins of the castle, Lilleborg, in the island of Bornholm, in the Baltic. The walls are fairly intact. A number of antiquities have been found. The castle was destroyed in the wars of the thirteenth century.——The demand for electricity in Copenhagen is so great that it has been decided to enlarge the municipal system at a cost of 22,000 kr.——A German firm purposes to commence the reworking of the old limestone quarries at Sangstrup, near Grenaa, with the stone from which many ancient churches in Jutland were built.——One of the greatest engineering works undertaken in Denmark has been completed of late, viz., the construction of the great breakwater at Knudshoved in the Great Belt, and *viâ* which passes the railway and steamboat traffic with the Continent. It is 950 ft. in length, and was commenced by a firm of contractors in 1890 under the supervision of Government engineers. The cost has been about 450,000 kr.

MISCELLANEOUS.

ARCHÆOLOGICAL DISCOVERIES NEAR CARDIFF.—Some discoveries of an archæological character have been made on the Ely Racecourse, near Cardiff. Trenches were dug, and in two of them were found sections of Roman hypocaust hot-air pipes, fragments of Roman pottery of a black and greyish colour, pieces of Roman mortar, a boar's tusk, and two portions of human bones. The discoveries made do not quite coincide with the theory of Mr. Storrie that a marsh village formerly existed on the racecourse, but there is every indication that the spot was once the site of a large Roman villa or encampment. The investigations will be continued under the auspices of the Naturalists' Society.—*Western Mail.*

GALLOWGATE, NEWCASTLE.—A large slice of the old houses at the south side of Gallowgate has now been removed, says the *Newcastle Chronicle*, and probably ere a few months pass away the whole of that portion of the street, with the baths included, will be razed to the ground. There will be enough land left, however, for the formation of a few shops after the widened thoroughfare has been made. The present improvement has been decided upon after mature consideration, and after various suggestions for a wider thoroughfare to the Barrack-road had been made. One of these suggestions was to cut a way straight through the property in the neighbourhood of the Co-operative Stores in Newgate-street and form a wide road from that way to Gallowgate. Another idea, embodied in plans shown at the Jubilee Exhibition in 1887, was that of Mr. J. W. Taylor, architect. It was to make a thoroughfare directly through the old property at the foot of Percy-street, carry it behind Albion-street, over the lower portion of the Leazes, and straight on to the Barrack-road. Both these ideas were excellent, and neither would have entailed a fabulous expense. As the Corporation, however, have decided on the middle course, the public have nothing now to do but to acquiesce and be satisfied. But what a change there will be in Gallowgate if the new infirmary should be built on the Leazes, and a wide thoroughfare, with tramlines, constructed to run to the north-west end of the city!

INVENTIONS EXHIBITION IN COPENHAGEN.—An international exhibition of modern inventions is now being held in Copenhagen. The majority of exhibitors are foreign, mostly German. There are 303 exhibits, including motors of all kinds, automatic tools, artesian bores, electric apparatus, transport appliances, furniture, stoneware, lightning and ventilation apparatus, sewerage improvements, pumps, &c.

SURVEYORS' INSTITUTION PRIZES.—The Secretary of the Surveyors' Institution writes that in our list of the candidates who have passed their examination (page 326 *ante*) the asterisks referring to footnotes stating the winners of prizes appear to refer to the names following them instead of those preceding them, which are the prize-winners' names. We do not read it so; an asterisk is usually placed at the end of the name or sentence to which a footnote refers, and not at the beginning, and a space was left by the printers between the asterisk and the following name. To make it quite clear, however, we may state that the asterisk references in the list refer in each case to the name preceding them.

THE ALBERT PALACE, BATTERSEA.—The sale is fixed for the 29th inst. of the materials of the Albert Palace, Battersea, and Connaught Hall which formed part of the Dublin Exhibition, 1872. The sale will be made by order of the Commissioners of Her Majesty's Works, but it seems will not extend to the great organ which, we read, has been bought for the new Abbey Church at Fort Augustus, in Scotland. It is also stated that arrangements are pending for a disposal of all the palace site for building purposes. The materials comprise 1,000 tons of wrought and cast iron in girders, columns, principals, &c., and 16,000 ft. of flanged hot-water piping, with 1,000 ft. of iron railing. The palace has remained closed for six years past, having been last used for a "Wild West" entertainment.

JERUSALEM AND JAFFA.—According to a recent report of the British Consul at Jerusalem, it would seem that ancient Jerusalem is fast going the way of ancient Rome. On the western side houses have increased so rapidly within the last few years that a large suburb called "Modern Jerusalem" has arisen where previously fields and vineyards existed. Every available piece of land is being bought by benevolent societies, missions, and private persons. During the past year the first public garden was completed outside the Jaffa gate, and although, as long as Jerusalem has not a proper water supply, any improvement of the kind must necessarily be on a small scale, the public garden has, in addition to providing the inhabitants with a place of resort and recreation, done away with what formerly used to be a waste-heap. At Jaffa, a series of buildings, consisting of 100 shops and stores with dwellings over them, are being constructed by the Greek Convent just outside the old gate of the town. It is reported that a concession for irrigating the orange-groves and plain of Jaffa with water from the river Auga has been given to Mr. Navon, of Jerusalem, the concessionaire of the Jaffa-Jerusalem Railway.

ANTIQUARIAN FIND AT BUXTON.—Grinlow, an ancient barrow, better known as Solomon's Temple, on the summit of a hill overlooking Buxton, has just been opened by permission of the Duke of Devonshire. Some local antiquarians personally undertook the excavation, and were rewarded for their trouble by finding, just a foot from the surface, the skeleton of a human being. A foot deeper lay another skeleton. Between the body and the knees lay a rude earthen vessel, 4 in. in height by 3 in. wide, the interior being of dark blue colour, and the outside a pale red. On the exterior is a rude ornament. The vessel is stated to be early British. The skeleton, which was in a more perfect condition than the first-named, was laid in a cist, and was that of a person nearly 6 ft. in height.

AN ANCIENT GATE OF TOTNES.—Respecting the restoration of the ancient north gate presented to the Borough of Totnes by Mr. Mildmay, M.P., Mr. James Hine, architect, Plymouth, reported to the Totnes Corporation on the 24th ult. that the gate had a less pleasing appearance than when he last saw it, having been denuded of all the growth which formerly clung to it, and which contributed so much to its beauty. But while regretting this was entirely removed, it would no doubt in time have brought down the arch. Above the crown of the arch there was a low parapet wall, which no doubt once terminated with the battlements. They were usual features in structures of this kind, and the most ancient seal of the borough he imagined showed an embattled gateway. Mr. Hine further advised the building of the battlements, and allowing the ivy to grow over the masonry on both sides.—The report was referred to the Public Health Committee.

THE TOWER BRIDGE SOUTHERN APPROACH.—The case of the Corporation of London against the application of the principle of betterment under the Bill promoted by the London County Council was opened on the 1st inst. by Mr. Littler to the Committee of the House of Commons, presided over by Mr. Coddington. He contended that the property on the approaches was bettered by the Corporation, who had spent 1,000,000*l.* on the Tower Bridge, and did not ask for betterment at all. The sum involved under that head was a comparatively small one, and those who seemed to be bettered would have to contest the great question of principle against a wealthy body like the London County Council, and would have to go to great expense. He submitted, therefore, that such a large question could not properly be settled in a Bill of this kind. The Chairman gave the judgment of the Committee as follows:—The committee has decided that the preamble of the Bill is proved subject to these conditions—that the betterment charge should only apply where

it is clearly shown that property is substantially and permanently increased in value by the improvement. We also consider that before the alterations are begun property owners affected shall have power to claim that a valuer be appointed by the Local Government Board to make an independent valuation at the expense of the London County Council of such land situated within the limits of deviation as the London County Council consider will be subject to betterment, and the Committee are of opinion that the subsequent valuations for betterment should be included in one assessment.

LANGSTONS' PATENT FOLDING FIREGUARD.—This is a form of fireguard constructed to be hinged to the grate or mantelpiece permanently, and to open in folding pieces and fold back against the sides of the grate. It seems quite feasible, and is certainly better than the fireguard hung on to the bars, which is an insufficient protection and looks unsightly. This one, as the patentee, Mr. H. Hardwicke Langston, points out, may be made an ornamental adjunct to the fireplace, and serve as a covering or front of it when not in use.

DIRECTORSHIP OF THE NATIONAL GALLERY.—Mr. Poynter, R.A., has been selected to the vacant Directorship of the National Gallery. The choice lay between him and Mr. Sidney Colvin, Keeper of the Prints at the British Museum, and late Slade Professor of Fine Art at Cambridge.

THE CITY COMMISSION OF SEWERS.—At the adjourned meeting of this Court on Tuesday, the principal subjects discussed were the question of erecting swimming-baths and washhouses within the City, the widening of Milton-street, Cripplegate, and the reappointment of Dr. Wm. Sedgwick Saunders as Medical Officer of Health. In opposition to the motion of Mr. A. C. Morton, M.P., to refer the question of the baths to the Sanitary Committee, the previous question was moved as an amendment by Mr. Miller, but the amendment was lost by a large majority, and the original motion was carried by 41 against 6. A deputation of the Vestry of St. Giles', Cripplegate Without, was introduced by Mr. Deputy Harvey to advocate the removal of a portion of a single house, and the taking into the roadway of 50 superficial feet of its site, the effect of which would be to give a clear width throughout of 24 ft, instead of 23'5 at one end, but only 19 ft. 6 in. at the other, which the street now has. No real opposition to the reappointment of Dr. Saunders was offered, but Mr. Wallace, Chairman of the Finance and Improvement Committee, moved to refer the question to a Special Committee, which would meet next day to consider the question of reappointments to vacancies in the engineers' department. The attention of the Sanitary Committee was drawn to the insanitary condition of a court in Cripplegate, Bridgewater-Place, which was described by a member as "almost a plague-spot in the City," which had seen no improvement for 200 years.

LEGAL.

BUILDING LINE CASE, MIDDLESBROUGH.

ON the 25th ult., at the Middlesbrough Police-court. Mr. C. J. Coleman, stipendary, gave judgment with respect to the action of the Corporation of Middlesbrough against Mr. Scott, builder, for not having set back, in accordance with the order of the Court, a certain wooden building in Linthorpe-road. Mr. Scott is the owner of a plot of land at the corner of Southfield-road and Linthorpe-road on which were three small wooden buildings used as shops, all of which were in close proximity to the footpath, and the Corporation claimed a 30-ft. set back in Linthorpe-road and a 70-ft. set back in Southfield-road. No. 1 having been built in 1874, and before the Public Health Act was passed empowering the Corporation to deal with such houses, could not therefore be dealt with, and as No. 2, which adjoined Southfield-road, could not, in the opinion of Mr. Coleman, be brought within the 70-ft. set back, these two summonses were dismissed, but in the case of the building No. 3 he decided that the Corporation succeeded, and ordered defendant to pay the costs, fixing the penalty at the nominal sum of 5s., as he assumed that the defendant would at once remove the building. Since that decision defendant had cut off a slice of No. 3 and brought it in a line with No. 1, joining the two buildings together by a hoarding, and those buildings were still several feet in advance of Ashburton-terrace, which the Corporation claimed to be the building line in Linthorpe-road. Mr. Bainbridge, Town Clerk, submitted that the order of the Court had not been carried out. Mr. Parrington, for the defendant, maintained that he had complied with the requirements of the Public Health Act. No. 1 he contended was the building line in Linthorpe-road and not Ashburton-terrace, and they had brought No. 3 building to that line, and he submitted the Corporation could not take a considerable portion of Mr. Scott's land as they were endeavouring to do without compensating him for it. Since the former proceedings no fresh notice had been given to defendant, and though Mr. Bainbridge argued that this was unnecessary as any building would be an offence against the Act if it came in front of Ashburton-terrace, he (Mr. Coleman) decided that defendant was entitled to a fresh written notice. He regretted the case should be decided on a technical point and not on its merits. He, therefore, dismissed the summons with costs.—*Yorkshire Herald.*

OBSTRUCTION OF ANCIENT LIGHTS AT BRADFORD.

IN the Chancery Division of the High Court of Justice on Friday, last week, a motion was heard by Mr. Justice Chitty on the part of Edward Pye and Chas. Greening, for an injunction to restrain Alfred Rendell from the erection of buildings in Albion-court, Bradford, which the plaintiffs alleged interfered with their ancient lights.

Affidavits from engineers and architects on both sides were handed in and models submitted, and at the conclusion of the arguments his Lordship granted the injunction, and refused to permit continuance.

Mr. Byrne, Q.C., appeared as counsel for the plaintiffs, and Mr. Farwell, Q.C., for the defendant.

LIGHT AND AIR CASE.

IN the Chancery Division on Tuesday Mr. Justice Stirling gave a considered judgment in the case of Aldin *v.* Latimer Clark & Co. (argued last sittings), it being an action by the lessee of certain premises at Richmond, Surrey, to restrain the defendants, the owners of adjoining property, upon which they had erected works for the purpose of supplying the town with electric light, from violating in various ways his rights as lessee. The chief ground of complaint on the part of the plaintiff was that the works erected by the defendant company injuriously affected the access of air to the drying-sheds used by him in his business of a timber-merchant, so as to render them substantially less useful for the purposes of such business carried on upon such premises. The plaintiff also complained of alleged interference with a right-of-way granted by a certain indenture of lease dated July 1, 1878; of interference with certain ventilators in his stables; and of user of the defendants' property so as to heat his (plaintiff's) stables, and render them unhealthy, and so as to endanger his premises and stock-in-trade, and cause risk of damage by fire.

The plaintiff derived his title from a Mr. Munro, who was also the predecessor in title of the defendant company. The facts are shortly as follows:—In April, 1878, Munro agreed to sell the goodwill of his business of a timber merchant to the plaintiff for 1,000*l.*, and to grant him a lease of that portion of the property on which that business was carried on. On July 11 Munro granted the plaintiff a lease of the premises in question with buildings thereon for twenty-one years, with a right-of-way over a portion of the adjoining property, and such lease contained a covenant for quiet enjoyment in the usual terms. After the death of Munro his devisee sold the whole of his property (including that demised to the plaintiff) to the defendants, who proceeded to erect thereon their electric lighting works.

His Lordship, in the course of an elaborate judgment, said that he had come to the conclusion that some injury to the drying-sheds had been made out, but not sufficient to justify the granting of an injunction. The plaintiff was entitled to an inquiry as to the damages he had sustained by reason of the buildings rendering the sheds less fit for use in the ordinary course of his business as a timber merchant. With regard to the other part of the case, the learned judge said that he was of opinion that Munro became subject to the obligation to abstain from doing anything on his adjoining property which would substantially interfere with the carrying on of that business in the ordinary course; and that obligation bound the defendants, as assigns from him, subject to existing lease.

Mr. Graham Hastings, Q.C., and Mr. Ingpen appeared as counsel for the plaintiff; and Mr. Finlay, Q.C., Mr. P. Beale, Q.C., and Mr. Marcy represented the defendants.

CAPITAL AND LABOUR.

CONCILIATION IN THE NEWCASTLE BUILDING TRADE.—At an adjourned meeting of the representatives of the Building Trade Federation and of the men connected with the joiners, millwrights, and sawyers in Newcastle and Gateshead, held on the 27th ult., the Rev. Canon Moore-Ede in the chair, it was agreed that an advance of a halfpenny per hour should be granted to all joiners, millwrights, and sawyers whose wages are at present less than 9d. per hour, such alteration to come into force on the 1st August next. It is hoped that now this wages question has been amicably arranged, and a conciliation Board on the point of being established, that the day of stoppages of work and dislocation of the local building trade is past.

STRIKE OF BRICKMAKERS AT WEST THURROCK.—A number of trades union brickmakers have struck work at the Grays Chalk Quarry Company's works, and also at Messrs. Gibbs's works, West Thurrock, as a protest against a proposal by the employers to reduce the pay to 9d. per thousand. Such reduction according to the statements of the men, would affect their wages to the extent of 9s. 6d. per week in some cases. Non-union men are filling the vacancies created.

BRICKLAYERS' STRIKE, SOUTHSEA.—On Monday last there commenced a strike of the bricklayers and labourers of Southsea, the whole of whom left their work on that evening, The number of men on the two branches now out is estimated at about 780, but if the struggle should prove to be a protracted one, hundreds of men in other branches will shortly be compelled to suffer in consequence. A similar strike took place in March of last year, but happily ended in little over a week by the masters giving both branches ½d. per hour more, viz., from 7d. to 7½d. and from 5d. to 5½d. respectively. The present demand is an additional ½d. on each branch (*i.e.* from 7½d. to 8d., &c.). The Mayor of Southsea has been endeavouring to act as mediator, but without success.

MEETINGS.

FRIDAY, MAY 4.

Architectural Association.—Members' *Soirée*, to be held in the Holborn Town Hall. 7.45 p.m.

SATURDAY, MAY 5.

Architectural Association Camera Club.—Visit to Hampton Court Palace, by special permission.

Sanitary Inspectors' Association.—Mr. W. W. West on "Sewer and Drain Ventilation." 6 p.m.

St. Paul's Ecclesiological Society.—Visit to the Church of St. Helen's, Bishopsgate, under the guidance of Mr. G. H. Birch, F.S.A. 3.30 p.m.

Queen's College, Cork.—Mr. Arthur Hill on "The History of Architecture." XVI. 3 p.m.

Edinburgh Architectural Association.—(1) Visit to Biel; (2) Visit to Stenton Church.

MONDAY, MAY 7.

Royal Institute of British Architects.—Annual General Meeting. 8 p.m.

University Extension Society (Chelsea Town Hall).—Mr. Roger E. Fry, M.A., on "Lionardo da Vinci." III. 3 p.m.

Sanitary Institute (Lectures on Meteorology in Relation to Hygiene).—Dr. C. Theodore Williams on "Climate in Relation to Health and Geographical Distribution of Disease." 8.30 p.m.

Society of Engineers.—Mr. R. Nelson Boyd on "A Deep Boring near Freistadt, Austria, by the Canadian System." 7.30 p.m.

Victoria Institute.—4.30 p m.

Liverpool Architectural Society.—Annual General Meeting, when the closing address by the President, Mr. H. Hartley, will be delivered. 7.30 p.m.

TUESDAY, MAY 8.

Institution of Civil Engineers.—(1) Paper to be further discussed:—"The Manufacture of Briquette Fuel," by Mr. William Colquhoun; (2) (Papers to be read, time permitting):—*a.* "Recent Types of Ferry Steamers," by Mr. Andrew Brown; *b.* "The Birkenhead Ferry-boats, *Wirral* and *Mersey*," by Mr. William Carson. 8 p.m.

Society of Arts (Applied Art Section).—Mr. J. Starkie Gardner on "Pewter." 8 p.m.

WEDNESDAY, MAY 9.

Carpenters' Company (Carpenters' Hall, London Wall).—Mr. Thomas Blashill on "Doors, Windows, and Ornamental Joinery." 8 p.m.

Society of Arts.—8 p.m.

THURSDAY, MAY 10.

Institution of Electrical Engineers.—Continuation of discussion on Mr. R. E. Crompton's paper on "The Cost of Electrical Energy." 8 p.m.

Sanitary Institute (Lectures on Meteorology in Relation to Hygiene).—Mr. F. Gaster on "Fog, Clouds, and Sunshine." 8.30 p.m.

Society of Antiquaries.—8.30 p.m.

FRIDAY, MAY 11.

Architectural Association.—Paper by Mr. Henry Longden, entitled "Practical Remarks on the Working of Wrought Iron," with Examples. 7.30 p.m.

Sanitary Inspectors' Association.—Annual Conference, Nottingham.

SATURDAY, MAY 12.

Incorporated Associaton of Municipal and County Engineers.—Lancashire and Cheshire District Meeting, to be held at Chester.

Sanitary Inspectors' Association.—Annual Conference, Nottingham (*continued*).

Queen's College, Cork.—Mr. Arthur Hill on "The History of Architecture." XVII. 3 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

5,703.—WOOD-CARVING MACHINES: *H. H. Adams.*—In wood-carving machines, where a gang of rotary cutting tools are employed, all operated simultaneously to produce carvings; the improvements are mainly embodied in the mechanism whereby a movable support, in which is mounted the counter-shaft, is adapted to have vertical and horizontal endwise adjustments.

7,353.—LADDER STAND OR PLATFORM: *J. H. Heathman.*—The platform, which is the subject of this patent, is made so that it can be used either before or behind a ladder. The framework is made jointed, so that the stand can be pushed through between the ladder sides, out of the way of any person ascending the ladder, and drawn out again after the person has passed it. The stand is supported by diagonal arms, on which hooks are affixed.

10,045.—FIREPROOF FRAMING: *T. L. Bank.*—According to this invention, metallic standards of a cruciform cross section are fixed in sockets and stayed by bars of T section, and keyed or clipped together. This constr tion of wa

CONTRACTS AND PUBLIC APPOINTMENTS.

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Sewerage Works	Rawtenstall Corp.	*Official*	May 7
Engine House, &c. Wellington Mills, Elton	Bury Co-op. Manufacturing Co. Lim.	Jno. Garnett	May 8
Drainage Works, Thorpe Schools	Idle School Board	Kendall & Bakes	do.
Drainage Works, St. Agnes	Truro R.S.A.	R. H. Worth	do.
Railway Hotel, Chapeltown, near Sheffield		R. Dixon	do.
Iron Roofs, &c.	Spalding Impt. Com.	J. G. Hawkins	do.
*Paving Works, Pipe Sewers, &c.	Borough of West Ham	L. Angell	do.
Additions to Schools, Maryport	Ellenborough Sch. Bd.	*Official*	do.
*Hire of Horses	St. Saviour's Bd. of W.	do.	do.
*Bass Brooms	do.	do.	do.
*Swimming Baths, &c.	Ilford Local Board	do.	do.
*Supply of Road Materials	Lewisham Bd. of Wks.	do.	do.
*Making-up Roads, &c.	do.	do.	do.
Broken Flints	Kingston-upon-Thames Corporation	do.	May 9
Warehouse, Formby-street, Liverpool	L. & N. W. Ry. Co.	do.	do.
Street Works	Barrow-in-Furness	do.	do.
Sewerage, Brancastle, Norfolk	Docking R.S.A.	do.	do.
Restoration of Church, Bamburgh, Northumberland		Hicks & Charlewood	do.
Shop, Offices, &c. Hipperholme, near Halifax		Leeming & Leeming	do.
Four Houses, Shops, and Stable, Sheffield-road, Barnsley		H. Crawshaw	do.
Residence, Staincliffe-road, Dewsbury		W. Crawshaw	do.
School Buildings, &c.	Jacobston (Cornwall) School Board	O. B. Peter	do.
Sewerage Works	Rochdale Corp.	S. S. Platt	do.
*Tar-paving Works	Mile End Old Town Vestry	J. M. Knight	do.
Road Materials, Guildford	Blackheath High. Bd.	G. Lintott	May 10
Additions to Police Station, East Stonehouse	Standing Joint Com.	E. H. Harbottle	do.
Schools, Woking	Rev. C. Rose		do.
Hotel, Thornhill Lees, near Dewsbury	Geo. Knowles		do.
*Painting Works, &c. S.W. Hospital	Met. Asylums Board	*Official*	do.
Road Improvement Works, Taff's Well	Glamorgan C. C.	do.	do.
Police Station, Aberaman	do.	do.	do.
*Cast-iron Fences, Gates, &c.	Brighton Town Coun.	F. J. C. May	May 11
Cemetery Chapel, near Durham	Willington Local Board	Jno. Cooke	May 12
Church and Church Hall, Llwynypia, Wales	Rev. J. D. James	E. M. B. Vaughan	do.
House, Gustard Wood, near Buckingham	F. Wright		do
National Schools, Tweedmouth	R. G. Bolam		do.
Sewers (23 miles)	Stafford Corporation	W. Blackshaw	May 14
Water Mains	Basford(Notts)U.R.S.A	G. Hodson	do.
House, Beekfoot, Eskdale	Mr. D. Sharpe	Jno. Butler	do.
Cast-iron Pipes	Dewsbury, &c. Waterworks Co.	G. H. Hill	May 15

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Additions to Workhouse	Poole Union	H. F. J. Barnes	May 15
*Sewerage Works	Wimbledon Loc. Bd.	C. H. Cooper	do.
*Underground Convenience	Camberwell Vestry	O. S. Brown	do.
*New Club	Pontypool Constitutional Club Co.	*Official*	do.
*Paving New Streets	Camberwell Vestry	do.	do.
*Sewers and Drain Works	do.	do.	do.
*Hot Water Heating	Southend-on-Sea Corp.	W. Y. Hobbiss	May 16
Workshops at Schools, Portsmouth	Portsea Union	Rake & Cogswell	do.
Church Restoration, Sowerby Bridge, Yorks.		Horsfall & Williams	May 17
*Guernsey Granite Pitchings	St. Matthew (Bethnal Green) Vestry	F. W. Barratt	do.
Residence, &c.	Uckfield Grammar Sch.	*Official*	May 19
Additions to Laundry, Workhouse	Birmingham Union	W. H. Ward	do.
*Six Villas, Cheshunt, &c.		J. Bunce	do.
*Alterations, &c. to Reservoir	Cheshunt Loc. Bd.	Pollard & Tingle	May 21
Technical Schools	Swindon New Town Loc. Bd.	T. B. Silcock	do.
Alterat'ons to Police Station, Holmfirth	Standing Jt. Com.	J. V. Edwards	do.
Granite Road Metal	Ely Corp.	W. McKelvie	do.
Additions to Schools, California	Ipswich Sch. Bd.	T. W. Cotman	May 22
County Buildings, Llangefin, Anglesey	Standing Jt. Com.	*Official*	do.
School Buildings, Redcross-street	Bristol Sch. Bd.	E. W. Barnes	May 28
*Construction Water Reservoir	Buxton Loc. Bd.	J. Hague	May 30
*Portland Cement	Toxteth Park Loc. Bd.	John Price	June 4
Two Bridges	Taunton Corp.	J. H. Smith	June 5
Twenty Houses, Leeds		W. A. Holson	No date
House, Strines, Lancs.		S. Fidler & Sons	do.
Shops, South Brent, Devon	C. Harris		do.
*Painting Works, Woolwich District	War Department	*Official*	do
*Painting Works, Chelsea and Hounslow	do.	do.	do.
*Workhouse Infirmary	Brentford Union	W. H. Ward	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Clerk of Works	Guildford Union	2*l.* 10s.	May 8
*Clerk of Works	Norwich Corp.		May 12
*Road Foreman	Rotherhithe Vestry	2*l.* 10s.	May 17
*Civil Engineer	Stamford T. C.	300*l.*	No date

Those marked with an asterisk (*) are advertised in this Number. Competition, p. iv. *Contracts, pp.* iv., vi., *and* viii. *Public Appointments, p.* xx.

or partition affords great strength with lightness, and can be rapidly and cheaply erected.

11,343.—SEWER TRAPS WITH PORTABLE GRATINGS: *C. Oaks.*—A metallic grating and frame is fitted to the top of the sewer trap, the trap being provided with holes for inspection or ventilation. The trap and connexions are made in glazed earthernware or corrugated iron.

8,379.—CLOSETS: *J. Duckett & Son, Limited.*—Improvements are made in hingeing the seat, and in the construction of the pan, &c., by making a hole at top to serve as inlet, and dispensing with the usual connexion. Other constructional details are added.

9,351.—CISTERNS: *J. E. Hussey and another.*—Contained within a ball-cock cistern is a syphon, united at one end and at the bottom of the cistern to the discharge-pipe. The other end is bell-shaped, and a small pipe is inserted. On this small pipe is a valve for admission of water to the open end of the syphon.

1,334.—WEDGE-CAP FOR SECURING TOOLS TO HANDELS: *W. H. Brown.*—The cap and wedges are cast in one piece and arranged to give the greatest amount of wedging power, and screwed to the handle of the tool by counter-sunk screws.

1,475.—SANITARY JOINTS, &c.: *H. F. Buchan.*—Instead of a wiped or plumber's joint for closet and other connexions, a corrugated or fluted joint, somewhat similar to a union, is used in the same way, and for similar purposes.

NEW APPLICATIONS FOR LETTERS PATENT.

APRIL 16.—7,496, G. Harling, Sliding Windows or Window Sashes.—7,500, S. Brierley, Waste-Preventing Syphon Cistern.—7,501, R. Hall and J. Twigg, Wood Fencing or Trellis Work.—7,525, J. Pitt, Chimney-Cowls.—7,547, W. Quelch, Sash Windows.—7,550. J. Ellis, Sash Bars or Astragals used for Glazing without Putty.

APRIL 17.—7,580, R. Threlfall, Hanging Window-sashes.—7,624, J. Bailey, Fastenings for Door-handles, &c.—7,632, G. Adams, Sashes and Sash-frames.—7,649, A. Stevens, Baker's Ovens.

APRIL 18.—7,665, S. Potter, Sash Windows.—7,697, T. Rhodes and Others, Unbreakable Flushing Cisterns, Tanks, &c.

APRIL 19.—7,732, G. Webb, Revolving Cowls for Chimneys.—7,765, J. Bates, Kilns for Burning Bricks, &c.—7,767, M. Lee, Stoves.—7,776, C. Challis, Gratings or Strainers for Sinks, Drains, &c.

APRIL 20.—7,807, W. Cole, Venetian Blind Lath.—7,812, C. Kennell, Actuating Ventilators.—7,836, B. Nicklin and G. Milward, Chimney Cowls, &c.—7,837, J. Gibbs, Collecting Clear Rain Water from Roofs, &c.—7,840, G. Farini, Door Closers.—7,847, T. Inge, Sash-fastener, &c.

APRIL 21.—7,906, R. Easton and H. Wilson & Co., Limited, Door Bolt.—7,915, H. Ford, Window-sashes and Frames.—7,922, F. Piper, Devices for Holding Sash-lines to Sashes.—7,937, R. Yorke, Metal Pipes.—7,941, M. Bounds, Brass Fittings for Tip-up Lavatory Basins.—7,948, G. and J. Brown, Hand-planes.

PROVISIONAL SPECIFICATIONS ACCEPTED.

3,741, R. Way, Sash-fastener.—4,612, H. Willings and E. Eaton, Device for Supporting a Window-sash and preventing same from being opened.—4,655, S. Collyers, Coloured Mosaics.—4,688, E. Goddard, Wall Gas-brackets.—4,964, H. Woollett, Chimney-pots.—5,574, C. Cooper, Cleansing Sewers, Drains, and Pipes.—6,296, E. Eggo, Window Fasteners.—6,415, G. Farini, Window Fasteners.—6,467, D. Melvin and J. Cranford, Holdfast for the Secure Fixing of Sash-line or Cord used in Hanging Windows.—6,608, C. Mather, Garden Tiles.—6,634, S. Harvey and J. Bartlett, Metal Lathing.—6,636, C. Westley, Door Furniture.—6,664, G. Couch, Window-frames and Sashes and Fittings therefor.—6,750, R. Cornfield, Securing Brass Fittings to Lead, Tin, &c.—6,764, W. Nicol, Windows, &c.—6,784, A. Donaldson, Water-closets.—6,825, J. Jones, Manhole Covers for Drains, &c.—6,846, F. Lawson, Architects' Set Squares.—6,870, J. Pride, Safety Attachments for Windows.—6,890, G. Cory and J. Casbay, Paving for Roads and Streets.—6,904, F. Trier, Machinery for Working Stone.—6,931, A. and T. Sabine, Die for making Earthenware Pipes, &c.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

11,325, J. Lambert, Reversible Sash-opener and Ventilator.—11,776, C. Ross, Safety Door-fastener.—23,729, J. Hay, Window-sashes.—1,377, C. Morel and A. Heimpel, Crushing Apparatus for Cements, &c.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

APRIL 19.—By *Phillips, Lea, & Dawies:* 154 to 170 (even), 155, 157, 165, 173, to 181 (odd), Cannon-st-rd., Commercial-rd., E.; and 1 to 7, Norman Buildings, the lease of, u.t. 21 yrs., g.r. 452*l.*, 1,050*l.*—By *Thurgood & Martin* (at Kingston): F. house with shop and plot of land, London-st., Kingston, 800*l.*; "Ivy Cottages," Grove-rd., f., 370*l.*; "Alton" and "Moss Cottages," f., r. 48*l.*, 700*l.*; the f. residence "Clarence Lodge," 835*l.*

APRIL 23.—By *G. A. Wilkinson & Son:* 102, Lansdowne-rd., Notting Hill, f., r. 75*l.*, 1,090*l.*—By *Segrave, Browett, & Taylor:* 5, 7, Phillip-st., St. George's-in-East, and l.g.r. of 8*l.*, u.t. 85 yrs., g.r. 15*l.*, r. 61*l.* 6s., 420*l.*; 11, 12, Park-st., Dorset-sq., u.t. 7 yrs., g.r. 9*l.* 9s., r. 78*l.* 8s., 120*l.*—By *Blake & Carpenter:* The f. residences, "Shrublands" and "Wrencote" Croydon, and 4 a. 2 r. 0 p., 9,000*l.*; the f. house called "The Grotto," Woodside, 225*l.*

APRIL 24.—By *Jenkins & Sons:* 9, Pelham-pl., Brompton, u.t. 24 yrs., g.r. 5*l.*, r. 63*l.*, 545*l.*; 55, Foxberry-rd., Brockley, u.t. 79 yrs., g.r. 5*l.*, 300*l.*—By *C. and H. White:* 113, Asylum-rd., Peckham, u.t. 52 yrs., g.r. 6*l.* 1s. 9d., r. 30*l.*, 255*l.*—By *Bean, Burnett, & Co:* 283, Vauxhall Bridge-rd., Pimlico, u.t. 30 yrs., g.r. 10*l.*, r. 55*l.*, 540*l.*; 137, Brixton-rd., Brixton, u.t. 7 yrs., g.r. 13*l.*, r. 42*l.*, 50*l.*; 20 to 30 and 34 to 40 (even), Kibworth-st., Kennington; and 1, 2, 3, Alfred-pl., u.t. 31 yrs., g.r. 32*l.* 10s., 1,150*l.*—By *Field & Sons:* 9, 10, St. George's-st., Peckham, u.t. 56 yrs., g.r. 5*l.* 12s., 340*l.*; 35 to 38, St. George's-st., u.t. 57 yrs., g.r. 16*l.*, 700*l.*; 41, 42, St. George's-st., u.t. 54 yrs., g.r. 8*l.*, 330*l.*; 163, Grange-rd., Bermondsey,; and 1, The Grange, f., r. 54*l.* 4s., 440*l.*; 164, 165, 166, Grange-rd., f., r. 83*l.*, 900*l.*; 2 to 8 (even), The Grange; and 1 to 13, Turner's Retreat, f., 1,200*l.*—By *Tidy & Son:* 78, Morton-rd., Islington, u.t. 58 yrs., g r. 8*l.*, 365*l.*; 1, St. Mask's-rd., Hackney, u.t. 62 yrs., g.r. 4*l.* 2s., 435*l.*—By *Holcombe & Betts:* 7, Cornwall-rd., Westbourne Pk., u.t. 65 yrs., g.r. 9*l.*, 340*l.*—By *T. Bate & Co.:* 2, Broadhurst Gardens, Hampstead, u.t. 84 yrs., g.r. 17s., 1,200*l.*; 31, Havelock-rd., Kensington, u.t. 81 yrs., g.r. 8*l.*, r. 45*l.* 10s., 350*l.*—By *W. W. Read & Co.:* 1, Malfort-rd., Camberwell, u.t. 82 yrs., g.r. 5*l.* 10s., r. 38*l.*, 235*l.*—By *Debenham, Tewson, & Co.:* f. cottage, Crouch End, r. 18s., 510*l.*; 141, Crouch Hill, f., r. 40*l.*, 700*l.*; f. house, shop, and garden, r. 65*l.*, 1,375*l.*: f. yd., stabling, workshops, &c., area 10,000 ft., r. 44*l.*, 800*l.*; 2, Pk.-rd., u.t. 60 yrs., g.r. 10*l.* 10s., r. 100*l.*, 1,260*l.*; 8, Pk.-rd., u.t. 61 yrs., g r. 6*l.*, r. 42*l.*, 400*l.*; 24, Pk.-rd., u.t. 61 yrs., g.r. 3*l.* 5s., r. 42*l.*, 350*l.*; 26, Pk.-rd., u.t. 61 yrs., g.r. 3*l.* 5s., r. 29*l.*, 18s., 200*l.*; 28 to 34 even, Pk.-rd., u.t. 59 yrs., g.r. 13*l.*, 820*l.*; 36, 38, and 40, Pk.-rd., u.t. 63 yrs., g.r. 9*l.* 15s., r. 74*l.*, 700*l.*; 1 to 6, Topsfield Cottages, u.t. 61 yrs., g.r. 2*l.*, r. 11*l.* 10s., 830*l.*; 17, Middle Lane, u.t. 61 yrs., g.r. 3*l.* 10s., r. 27*l.*, 295*l.*

APRIL 25.—By *W. Hallett:* 149, 151, Church-st., Paddington, f., 1,300*l.*—By *J. B. Smith & Co.:* 50, Little George-st., Hampstead-rd., u.t. 16 yrs., no g.r., 135*l.*—By *H. K. Farnam:* 81, 83, Pk.-rd., Crouch End, u.t. 20 yrs., g.r. 8*l.* 10s., 260*l.*—By *Inman Sharp, Harrington, & Roberts:* 14, Upper Bedford-pl., Russell-sq., u.t. 23 yrs., g.r. 24*l.*, 780*l.*—By *Furber, Price, & Furber:* Profit rental of 50*l.*, 24, Duke-st., Portland-pl., u.t. 8 yrs., 290*l.*; 3, Rosebery-rd., Clapham, u.t. 87 yrs., g.r. 10*l.* 10s., r. 55*l.*, 455*l.*—By *A. E. Christy:* Brookfield, Upper Richmond-rd., Putney, f., 1,120*l.*; "Bucklands," Keswick-rd., u.t. 83 yrs., g.r. 10*l.*, 935*l.*—By *B. Brown:* "Redcot," Woodford Green, Essex, f., r. 68*l.*, 1,250*l.*; 9 to 14, Amoy-pl., Limehouse, and 1 to 8, Rugg-st., u.t. 4 yrs., g.r. 14*l.*, 100*l.*—By *Mark Liell & Son:* Four plots of f. land, Downfield-rd., Walthamstow, 305*l.*; 62, Hampton-rd., Forest Gate, u.t. 90 yrs., g.r. 9*l.* 17s., 500*l.*; 68, Pigott-st., Limehouse, u.t. 74 yrs., g.r. 5*l.* 10s., 245*l.*; 18, Addington-rd., Bow, u.t. 53 yrs., g.r. 4*l.* 10s., r. 40*l.*, 425*l.*; 41, 43, Carlton-rd., Mile End, u.t. 30 yrs., g.r. 6*l.*, 470*l.*; 86, 88, Clinton-rd., u.t. 49 yrs., g.r. 8*l.*, r. 56*l.*, 525*l.*; 56, 62, St. Dunstan's-rd., u.t. 58 yrs., g.r. 7*l.*, 330*l.*; 52, Mostyn-rd., Bow, u.t. 32 yrs., g.r. 4*l.*, r. 28*l.*, 305*l.*

APRIL 26.—By *Newbon & Co.:* 1, Rockliffe-st., City-rd., u.t. 30 yrs., g.r. 6*l.* 6s., r. 55*l.*, 395*l.*; 11, Stavordale-rd., Highbury, u.t. 82 yrs., g.r. 8*l.*, r. 45*l.*, 400*l.*; 504, Hornsey-rd., Hornsey, f., r. 50*l.*, 750*l.*; 46, Manchester-st., Gray's Inn-rd., u.t. 9 yrs., g.r. 5*l.* 17*l.*, r. 42*l.*, 115*l.*; 31, Acacia-rd., Sydenham, u.t. 63 yrs., g.r. 6*l.* 10s., 95*l.*; 18, Mayes-rd., Wood Green, u.t. 84 yrs., g.r. 6*l.* 10s., r. 34*l.*, 300*l.*—By *C. C. & T. Moore:* No. 340, Mile End-rd., f., r. 60*l.*, 1,010*l.*; Nos. 182 and 184, Hanbury-st., f., r. 95*l.*, 1,910*l.*; 59 and 61, Duckett-st., f., 310*l.*; 30, 32, Pennyfields, Poplar, f., 400*l.*; two f. houses and shops in High-st., Ilford, r. 39*l.* 18s., 720*l.*; three f. ditto, r. 66*l.* 16s., 1,510*l.*; 48, 50, Aston-st., Limehouse, f., r. 30*l.*, 275*l.*; 18, 32, Maroon-st., f., 495*l.*; 3, 4, Robert-st., u.t. 6 yrs., g.r. 6*l.*, 55*l.*; leasehold rental, Cable-st., Shadwell, 50*l.*, u.t. 17 yrs., 355*l.*—By *S. B. Clark & Son:* 9, Blomfield-st., Paddington, u.t. 48 yrs., g.r. 5*l.*, r. 55*l.*, 470*l.*; 11, 13, 15, Blomfield-st., u.t. 48 yrs., g.r. 15*l.*, r. 167*l.*, 1,445*l.*; 21, 25, Chichester-rd., Kilburn, u.t. 63 yrs., g.r. 10*l.* 10s., r. 58*l.*, 455*l.*; 24, 26, Walmer-st., Marylebone, u.t. 10 yrs., g.r. 8*l.*, r. 48*l.*, 115*l.*; 97, Salisbury-st., u.t. 42 yrs., g.r. 5*l.*, 150*l.*; 12, 13, Henstridge-pl., St. John's Wood, u.t. 40 yrs., g.r. 10*l.*, r. 70*l.*, 650*l.*; 6, Abbey Gardens, u.t. 45 yrs., g.r. 2*l.*, r. 48*l.*, 465*l.*; 10, Ordnance-rd., u.t. 40 yrs., g.r. 5*l.*, r. 38*l.*, 400*l.*; 89, 91, Princess-st., Edgware-rd., u.t. 46 yrs., g.r. 11*l.*, r. 64*l.*, 615*l.*; 28, 29, Francis-st., Chelsea, u.t. 13 yrs., g.r. 7*l.*, r. 50*l.*, 215*l.*; 29, Little Grove-st., Marylebone, u.t. 23 yrs., g.r. 4*l.*, 75*l.*—By *Farebrother, Ellis, & Co.:* "Ravenswood," Terrace-rd., Walton-on-Thames, f., r. 75*l.*, 990*l.*; "The Albert Arms," High-st., Esher, f.g.r. of 7*l.* 10s., reversion in 71 yrs.; and f. house adjoining, r. 30*l.*, 810*l.*; f.g.r. of 12*l.*, Bowes-rd., Southgate, reversion in 85 yrs., 325*l.*—By *Stimson & Sons:* 169, 171, Lower Kennington Lane, Kennington, c, r. 115*l.*, 1,575*l.*; 246, Barry-rd., Dulwich, u.t. 90 yrs., g.r. 8*l.*, r. 48*l.*, 410*l.*; 95, Lordship Lane, u.t. 73 yrs, g.r. 3*l.* 15s., r. 45*l.*, 430*l.*; 19 to 29 (odd), McNeil-rd., Camberwell, u.t. 72 yrs., g.r. 30*l.*, 1,080*l.*; 17 to 27 (odd), Rignold-rd., u.t. 72 yrs., g.r. 30*l.*, 1,060*l.*; 4, 6, 8, Rignold-rd., u.t. 72 yrs., g.r. 15*l.*, 530*l.*; 26 to 48 (even), Rignold-rd., u.t. 72 yrs., g.r. 60*l.*, 2,140*l.*; 10, 12, 18, to 32 (even), Lyndhurst Grove, u.t. 72 yrs., g.r. 50*l.*, 1,770*l.*; f.g.r. of 44*l.*, Dalmaine-rd., Forest Hill, reversion in 70 yrs., 700*l.*; 36, 38, 40, Beadnell-rd., and 2,

f. 6, Ewart-rd., u.t. 69 yrs., g.r. 50*l.*, 300*l.*; i.g.r. of 27*l.*, Holly-st., Dalston, u.t. 14 yrs., g.r. 9*l.* 16*s.*, 115*l.*; 20, 21, Crozier-st., Lambeth, u.t. 30 yrs., g.r. 16*l.* 13*s.* 4*d.*, r. 76*l.*, 68*l.*

APRIL 27.—By *Ellis & Son:* 1, Brick Hill Lane, Upper Thames-st., f., area 6,000 ft., r. 224*l.*, subject to a deduction of 144*l.* 13*s.* 4*d.* during a life aged 48 yrs., 2,350*l.*—By *E. Owers:* 10, Stanhope-ter., Hyde Pk., u.t. 33 yrs., g.r. 15*l.*, r. 200*l.*, 2,170*l.*—By *E. Holdsworth:* 35, Olinda-rd., Stamford Hill, u.t. 85 yrs., g.r. 5*l.*, 170*l.*—By *W. B. Hallett:* 33, 35, 37, Bridge-rd., Battersea, West, u.t. 41 yrs., g.r. 15*l.*, r. 78*l.*, 550*l.*—By *Egerton, Breach & Galsworthy:* "The Cedars," High-st., Teddington, f., 2,750*l.*; "The Margaret Woffington Cottages," f., r. 95*l.* 12*s.*, 910*l.*—By *Baker & Sons:* 9 and 10, Little Britain, Aldersgate-st., f., r. 320*l.*, 5,150*l.*; "Green Oak Farm," Mickfield, Suffolk, f., 51 a. 1 r. 11 p., r. 90*l.*, 1,010*l.*

[Contractions used in these Lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street.; rd. for road; sq. for square; pl. for place; ter. for terrace cres. for crescent rd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.	ton	9/0/0 0/0/0
Teak, E.I. .. load		9/10/0 16/0/0
Sequoia, U.S.ft.cu		2/3 2/6
Ash, Canada load		2/15/0 4/0/0
Birch, do.....		2/5/0 3 5/0
Elm, do.		3/10/0 4/15/0
Fir, Dantsic, &c.		1/5/0 2/10/0
Oak, do.		2/10/0 4/15/0
Canada		5/10/0 7/0/0
Pine, Canada red		2/10/0 3/0/0
Do. Yellow		2/10/0 4/15/0
Lath, Dantsic, fath		4/10/0 5/10/0
St. Petersburg..		5/0/0 6/10/0
Wainscot, Riga, &c., log		2/5/0 4/10/0
Odessa, crown....		2/5/0 4/10/0
Deals, Finland and & 1st std	100	8/0/0 10/10/0
Do. 4th & 3rd ..		7/10/0 8/0/0
Do. Riga		7/10/0 9/0/0
St. Petersburg, 1st yellow		10/0/0 13/10/0
Do. 2nd yellow		8/0/0 9/0/0
Do. white		8/10/0 11/0/0
Swedish.....		8/10/0 16/10/0
White Sea.....		8/0/0 16/10/0
Canada, Pine 1st		22/10/0 29/10/0
Do. do. 2nd....		17/0/0 18/10/0
Do. do. 3rd, &c.		7/10/0 10/5/0
Do. Spruce, 1st		9/0/0 11/0/0
Do. do. 3rd & 2nd		6/10/0 7/10 0
New Brunswick		6/0/0 7/5/0
Battens, all kinds		3/0/0 15/0/0
Flooring boards, sq., 1 in. prep. 1st		0/10/0 0/15/0
Do. 2nd.....		0/7/6 0/12/6
Other qualities—		0/5/0 0/7/0
Cedar, Cuba .. ft.		3½ 4½
Honduras, &c.		3½ 4½
Mahogany, Cuba		3½ /6
St. Domingo, cargo av.		/3 1/6
Mexican do. do.		/3 /4
Tobasco do. do.		/3½ /6
Honduras do. ..		/3½ /5½
Box, Turkey ton		4/0/0 13/0/0
Rose, Rio.....		8/0/0 18/0/0
Bahia		7/0/0 17/0/0
Satin, St. Domingo.....		0/0/5 0/1/2

TIMBER (*continued*).

Sattn, Porto Rico		0/0/6 0/1/6
Walnut, Italian ..		0/0/3½ 0/0/7

METALS.

Iron—Pig, in Scotland	ton	2/2/6½ 0/0/0
Bar, Welsh, in London		5/17/6 6/0/0
Do. do. at works in Wales.....		5/7/6 5/10/0
Do. Staffordshire, in London.....		6/0/0 6/10/0
COPPER — British cake and ingot		41/15/0 42/5/0
Best selected ..		42/15/0 43/5/0
Sheets, strong ..		52/0/0 0/0/0
Chili, bars		39/17/6 40/2/6
YELLOW METAL	lb	0/0/4½ 0/0/5
LEAD — Pig, Spanish.....	ton	9/1/3 9/2/6
English com. brands.....		9/2/6 9/5/0
Sheet, English, 6 lbs. per sq. ft. and upwards		10/15/0 0/0/0
Pipe		11/5/0 0/0/0
ZINC — English sheet.....	ton	19/0/0 19/0/0
Vieille Montagne		19/10/0 0/0/0
TIN—Straits.....		71/7/6 71/17/6
Australian.....		72/0/0 72/10/0
English Ingots..		75/0/0 75/10/0
Banca		75/10/0 76/0/0
Billiton		72/0/0 72/10/0

OILS.

Linseed	ton	19/17/6 20/2/6
Cocoanut, Cochin		28/10/0 29/0/0
Do. Ceylon		24 5/0 0 0/0
Palm, Lagos.....		23 10/0 0/0/0
Rapeseed, English pale		21/10 0 22 5/0
Do. brown.....		20/0/0 0 0/0
Cottonseed ref....		21/0/0 22 0/0
Oleine		22 0 0 24/0/0
Lubricating, U.S.		4/0/0 5/0/0
Do. refined		5/0/0 12/0 0
TAR — Stockholm barrel		0/22/0 0/0/0
Archangel.....		0/11/0 0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.*]

ACCRINGTON.—For excavating, sewering, &c., a number of back streets, for the Corporation. Mr. William J. Newton, C.E., Borough Engineer, Town Hall, Accrington:—

George Adams, Oswaldthwistle*	George Cunliffe & Sons, Accrington*

* Accepted for various streets at per Schedule of Prices.

BANGOR (North Wales).—For the erection of wards for vagrants at the workhouse, for the Union Guardians:—

J. & R. Jones..... £488 0	Wm. O'Donnel Upper
David Owen 484 0	Bangor* 360 0
William Parry..... 469 10	*Accepted.

BARKING (Suffolk).—For erecting schools, Barking, Suffolk, for the Barking School Board. Mr. John S. Corder, architect, Ipswich:—

Kemey.....£1,398 0	Plummer.....£1,013 0
Mulley 1,061 2	Theobald, Needham (accepted) 859 0
Catchpole 1,047 0	
Orfeur 1,045 0	Gibbons 834 0

BRISTOL.—For the erection of school buildings, Eastville, for the Stapleton School Board. Mr. E. W. Barnes, architect, Guildhall Chambers, Broad-street, Bristol:—

Perkins £5,650	Cowlin & Son £4,763
Chapman 5,507	R. Wilkins & Son 4,669
Love & Waite..... 5,500	Hatherley & Carr 4,587
Stephens & Bastaw 5,219	Eastabrook & Son..... 4,573
Church 5,137	Humphries & Son..... 4,489
Forse 5,060	E. Davis 4,475
E. Clarke 4,998	Perrog 4,297
E. Walters 4,982	H. J. Rossiter (accepted).. 4,225
Love 4,895	Downs 4,130
Brock & Son 4,790	G. H. Wilkins 4,098

[Architects estimate, £4,150.]

BURNLEY.—Accepted for the erection of offices, Parker-lane and Saunder-bank, for the Corporation. Mr. F. S. Button, Borough Surveyor, Town Hall, Burnley. Quantities by Surveyor:—

Excavators, Masons, and Bricklayers.—Smith Bros.	£1,560 0 0
Carpenters and Joiners.—Clegg Bros.....	829 18 2
Slater.—O. Whittaker	42 4 4
Plumber and Glazier.—J. Shoesmith	244 0 0
Plasterer and Painter.—J. Shuttleworth	119 11 6

[All of Burnley.]

BURNLEY.—For the erection of three district police-stations, Cleaver-street, Cog-lane, and Kidrow-lane, for the Corporation. Mr. F. S. Button, C.E., Burnley:—

Cleaver-street.	
Masons.—Heap & Harrison, Burnley	£1,385 10 0
Joiners.—Geo. Smith & Son, Burnley	269 10 0
Slater.—William Stanworth, Burnley	55 0 0
Plumber and Glazier.—J. Brooks, Burnley....	107 0 0
Plasterer and Painter.—T. S. Radcliffe, Bridge End, Burnley.....	83 15 7
Cog-lane.	
Masons.—Geo. Read & Son, Burnley.....	927 9 11
Joiners.—Geo. Smith & Son, Burnley	209 0 0
Slater.—William Stanworth, Burnley	35 14 0
Plumber and Glazier. — Richard Roberts, Burnley	64 16 7
Plasterer and Painter.—T. S. Radcliffe, Bridge End, Burnley.....	65 3 4½
Kidrow-lane.	
Mason.—Thos. Smith, Burnley	1,165 5 1
Joiners.—Geo. Smith & Son, Burnley	209 10 0
Slater.—William Stanworth, Burnley	35 18 10
Plumbers and Glaziers.—Collinge Brothers, Burnley	58 19 3
Plasterer and Painter.—T. S. Radcliffe, Bridge End, Burnley.....	73 3 4

CARDIFF.—Accepted for the formation of roads and sewers, Nottingham and Lincoln Streets, Canton, Cardiff, for the Canton Property Company, Limited. Messrs. Veall & Sant, architects, Cardiff:—

Frank Ashley (lowest of eleven tenders received) £547 18 4

CARLISLE.—For the erection of a Salvation Army citadel and shops (first portion) for the Carlisle Citadel Buildings Company at Annetwell-street, Carlisle. Mr. Alexander Gordon, 101, Queen Victoria-street, E.C., and Mr. J. Williams Dunford, 100c, Queen Victoria-street, E.C., joint architects:—

R. J. Bryce £3,300	J. & R. Bell £2,989
G. Hill 3,284	J. H. Read 2,959
Beaty Bros..... 3,125	Martin & Co..... 2,753
Laing 3,028	T. Morgan, Wood Green* 2,700
J. Beaty 3,010	

* Accepted.

[Architect's estimate ..... £2,850.]

CATFORD.—For reinstatement after fire of No. 85, Catford Hill. Mr. Geo. Carter, architect, 513, Holloway-road:—

Coote £215 9	Walker, Catford*.....£193 15
Nicholls 210 0	*Accepted.

CHELMSFORD.—Accepted for the supply of 1,400 tons of broken granite, for the Town Council. Mr. G. H. Sasse, Borough Surveyor, 14, Museum-terrace, Chelmsford:—

L. Sommerfeld, 2, Fowkes Buildings, Gt. Tower-street, delivered at wharf, 13s. per ton, delivered at station, 12s. 6d. per ton.

COLNE (Lancs.).—For extension of sewer, &c., from Waterside to Cotton Tree and Lidgett, for the Local Board. Mr. Jno. Mallinson, Surveyor, Town Hall, Colne. Quantities by Surveyor:—

T. D. Debney, Revidge-road, Blackburn (accepted).
(Tendered for on a schedule of prices.)

COVENTRY.—For the erection of house, and additions, &c., to schools, South-street, for the School Board. Messrs. G. & J. Steane, architects, 22, Little Park-street, Coventry. Quantities by Mr. J. Gardner, Coventry:—

		For Repairs to Present Buildings.
E. Smith & Son	£2,844	.... £40
J. Worwood	2,637	 63
Liggins & Strong	2,620	 50
C. Gray Hill	2,580	 67
R. Wootton	2,570	 47
A. A. Wincott	2,550	 54
C. Haywood, Jr.	2,510	 35
C. Garlick, Coventry (accepted)	2,470	 40

CROYDON.—For the erection of workshops, &c., at the infirmary, Mayday-road, for the Union Guardians. Mr. Fred West, surveyor, 23, Coombe-road, Croydon;—

Akers & Co..... £249 0 0	J. W. Trappitt £217 0 0
W. Smith 240 0 0	T. Barton 216 0 0
H. Bacon 238 15 0	Bulled & Co..... 203 6 0
P. R. Hubbard..... 225 0 0	Huntley Bros. 178 0 0
Bryan & Son..... 221 0 0	A. Bullock, Croydon* 170 13 4

* Accepted.

DARTFORD.—Accepted for new lock, weir, and retaining wall, Dartford. Mr. W. H. Thomas, C.E., engineer:—

B. Cooke & Co., Battersea, about.....£4,000

DEWLISH (Dorset).—For alterations and repairs at the "Royal Oak" public-house, for Messrs. Hall & Woodhouse. Mr. A. L. T. Tilley, architect, 16, Cornhill, Dorchester:—

E. George £374 10	A. Ross, Dewlish* £248 12
P. Barrett & Son..... 261 0	* Accepted.

DUNDEE.—Accepted for marble and mosaic work at the new gas and water offices, for the Commissioners. Mr. W. Alexander, architect:—

Mainzer & Farrar £212 0 0

ECKINGTON.—For the erection of business premises, Shepherd-lane, for the Killamarsh Co-operative Society, Limited. Messrs. Fisher & Son, architects, 48, High-street, Ecklington:—

H. Sykes £1,450 0	J. Fidler £1,020 0
G. Stenton 1,200 0	G. Wright, Worksop*.. 950 0
T. Staveley..... 1,029 10	* Accepted.

FELIXSTOWE.—For alteration to Golf Club, Felixstowe. Mr. John S. Corder, architect, Ipswich:—

Thurman, Walton £204 8 6

FRINTON-ON-SEA.—For the erection of eighteen houses, for Mr. R. P. Cooper. Mr. W. G. Gillingham, architect, Frinton-on Sea, Essex:—

Girling & Coe £4,954	E. West £4,250
J. Dobson 4,822	Ellis & Turner..... 3,950
Bell & Son 4,360	H. Linzell (accepted) 3,619

[Architect's estimate, £3,760.]

GRAVESEND.—For pulling down and rebuilding 36 and 37, Queen-street, Gravesend, for Mr. J. Hill. Messrs. Rayner & Bridgland, architects:—

Tuffee £949	Martin £890
Rayfield 920	Seager 860
Dering 899	Multon & Wallis* 859

* Accepted.

GRAVESEND.—Accepted for converting two houses into one, for Mrs. Caddel:—

Multon & Wallis £250 0 0

[No competition.]

GRAVESEND.—For new buildings at New House Farm, for Mr. T. C. Colyer Fergusson. Messrs. Dann & Lucas, surveyors, Bexley:—

Butler.....£920	Archer £809
Lucas..... 890	Multon & Wallis (accepted) 799

HALIFAX.—Accepted for rebuilding the "Saddle" Inn, for Messrs. Brear & Brown, brewers, Hipperholme. Messrs. Jackson & Fox, architects, 22, George-street, Halifax. Quantities by the architects:—

Excavators' and Masons' work.—Jonathan Charnock & Sons, Halifax.....	£1,325 0 0
Carpenters' and Joiners' work.—Eli Alderson & Co., Luddendenfoot	398 0 0
Plumbers' and Glaziers' work.—John Naylor & Son, Halifax	200 0 0
Slaters' and Plasterers' work.—John Marshall, Hipperholme	183 0 0
Concreters' work.—Geo. Greenwood & Son, Halifax.....	30 19 0

HANLEY (Staffs.).—For alterations to the "Marquis of Granby" inn. Messrs. R. Scrivener & Sons, architects, Howard-place, Hanley:—

Ward.....£1,595 0	Godwin, Hanley*.....£1,399 0
Tildesley 1,514 0	Cowes 1,349 10
H. & R. Inskip..... 1,433 0	Monage 1,347 10

* Accepted.

IPSWICH.—For erecting stables at Ipswich, for the Hon. Stanhope Tollemache. Mr. J. S. Corder, architect, Ipswich:—

Bennett.....£375	Grayston (accepted).....£335
Catchpole..... 348	All of Ipswich.

KETTERING.—For the erection of school buildings, Hawthorne-road, for the School Board. Messrs. Gotch & Saunders, architects, George-street, Kettering. Quantities by architects:—

W. E. Shaw £1,893 10	C. & F. Henson £1,693 0
J. C. Neal 1,725 0	A. Barlow 1,646 0
J. V. White..... 1,707 0	G. V. Henson, Kettering
F. Barlow 1,699 0	(accepted) 1,630 0

LEYTON.—For forming, sewering, and making new roads on the Belmont Park Estate, High-street, Leyton. Mr. A. Barr, surveyor, 65, Chancery-lane, W.C.:—

	Aberdeen curb.	Norway curb.
Griffiths £1,919 0 0		....£1,835 0 0
Jeffreys & Marshall	1,710 0 0	.... 1,624 10 0
Hollingsworth	1,392 19 2	.... 1,323 19 2
Bell	1,358 0 0	.... 1,278 0 0
Harvey	1,268 0 0	.... 1,220 0 0
Adams.....	1,265 0 0	.... 1,299 0 0
Jackson	1,222 0 0	.... 1,122 0 0
Reeves.....	1,218 0 0	.... 1,168 0 0
Porter	975 0 0	.... 925 0 0
Adams (amended tender) *		1,160 0 0

* Accepted.

LONDON.—For repairs and renovations to the Baptist Chapel and School, The Grove, Stratford, E.:—

Hawkins £708 0	Bishop & Webb.....£349 10
Gladding 682 0	Hosking..... 306 0
Hill 355 0	Brand..... 264 10

LONDON.—Accepted for the supply of materials, &c., for one year ending March 25, 1895, for the Hendon Local Board. Mr. S. S. Grimley, Surveyor:—

	s. d.	
Leicestershire Granite, Messrs. Nowell & Co.	10 3	per ton to all stations
Hand-picked flints, H. Willmott	8 0	" " "
Hoggin (double screened) H. Willmott	6 0	" " "
Hoggin (single screened) H. Willmott	5 0	" " "
	Midland Stations.	
	s. d. s. d. s. d.	
Slag, Wm. Grimley & Son.....	7 5 7 4 7 3	per ton.
	Great Northern Stations.	
	s. d. s. d. s. d.	
Slag, Wm. Grimley & Son.....	7 3 7 7 7 9	per ton.

LONDON.—For making up private roads, under Section 150, Public Health Act, 1875, for the Hendon Local Board. Mr. S. S. Grimley, Engineer and Surveyor:—

—	For Metalling with Hand-pick'd Flints.	For Metalling with Slag.	For Metalling with Gravel.
	£ s. d.	£ s. d.	£ s. d.
Warner-road.			
Cooke & Co.	1,816 0 0	1,765 0 0	1,616 0 0
Thos. Adams.....	1,460 4 2	1,435 4 2	1,390 0 0
R. Ballard, Child's Hill....	1,312 3 6	1,174 13 6	1,097 18 6*
Claremont-road.			
Cooke & Co.	—	554 0 0	519 0 0
Thos. Adams.....	—	476 18 6	458 18 6
R. Ballard, Child's Hill....	—	399 16 10*	391 1 10

	If "London" Stoneware Pipes used.	If "Country" Pipes used.
	£ s. d.	£ s. d.
Ravenstone-road.		
Cooke & Co.	250 0 0	240 0 0
R. Ballard	244 17 0	234 17 0
Thos. Adams.....	214 8 6	208 8 6
Allen & Son, Hendon.....	167 3 7*	159 16 1

* Accepted.

LONDON.—For making up and paving Bishop's-road, Section II., for the Vestry of the Parish of Fulham. Mr. James P. Norrington, Surveyor:—

	Roadway.	York.	Adamant.	Victoria.	Stuart's.	Imperial.	Indurated Victoria.	Concrete Paving.
	£	£	£	£	£	£	£	£
Imperial Stone Co.....	—	—	—	—	—	—	195	—
Victoria Stone Co.	—	—	—	135	—	—	—	103
Nowell & Robson	183	159	—	—	—	—	—	—
Wimpey & Co...	192	160	119	—	—	—	—	—
Thos. Adams ..	212	164	127	135	127	129	—	83

LONDON.—For rebuilding head-master's house and dining-rooms, Charterhouse-square, E.C., for the Merchant Taylor's Company. Mr. W. Hilton Nash, architect, 5, Adelaide-place, E.C. Quantities by Mr. R. Fabian Russell:—

D. Charteris £9,750	J. Greenwood £9,066
Charles Cox..... 9,347	B. Nightingale 8,995
J. Grover & Son..... 9,288	Dove Bros. (accepted) .. 8,925

LONDON.—For redecoration of the "Camden Head," Camden-street, Islington, for Mr. S. Brander. Mr. Geo. Carter, architect, 513, Holloway-road:—

Kirby & Chase.....£264 10	A. Coombes, Islington*..£105 0
Stevens Bros. 126 0	*Accepted.

LONDON.—For the erection of foreman's-house, common-room, &c., Virgemount Works, Stratford, E., for Messrs. A. Boake, Roberts, & Co. Messrs. Fletcher & Migotti, architects:—

McCormick & Sons £1,455	[Courtney & Fairbairn £1,333
Nightingale 1,428	W. J. Walker 1,333
Norton 1,427	S. J. Scott (accepted) 1,263

LONDON.—For the construction of 235 ft. roads and sewers Knox-road, Stratford, for the West Ham School Board. Messrs. Newman & Jacques, architects, 2, Fen-court, London, E.C. Quantities by R. L. Curtis & Son:—

G. Wilson	£459	Thos. Adams	£335
D. H. Porter	389	John Jackson, Plaistow, E.*	325

* Accepted.

MAIDENHEAD THICKET.—For new house, Heathcourt Estate, Maidenhead Thicket, Berks., for Mr. Arthur Lawrence. Mr. Arthur Vernon, architect, 29, Cockspur-street, S.W., and High Wycombe:—

Bottrill	£1,535 0	Reavell	£1,425 0
Lovell	1,533 0	Smith	1,398 5
Gibson	1,468 0	Tucker	1,398 0
Simonds	1,462 0	Martin	1,385 0
Hunt	1,439 0	Wellicome	1,350 17
Flint	1,437 0		

PENARTH (S. Wales).—For the erection of villa residence and outbuildings, Sully. Mr. J. J. Evans, C.E., architect, Sunnyside, Penarth. Quantities by architect:—

W. B. Shephard	£1,845 0 0	T. Bevan	£1,207 0 0
D. G. Price	1,475 0 0	Edwin Williams, Whitchurch, near Cardiff (accepted)	1,154 6 6
Watkin Williams	1,350 0 0		
Morgan & Groom	1,249 0 0		

PINNER.—For house and stables, Royston-grove, Pinner. Mr. John W. Rhodes, architect, 7, Mitre-court Chambers, E.C. Quantities by Mr. Charles J. Ford, 4, Mitre-court, Fleet-street, E.C.:—

Stevens	£2,495	Dove & Co.	£2,370
Cowley & Drake	2,475	Waterman	2,339
Turner & Co.	2,377	Moody, Folkestone *	2,295
Gladwell	2,376		

* Accepted.

PRESTON.—For the construction of a china-clay shed annexe, for the Corporation:—
John Cartmell, Grunshaw-street, Preston £2,656 0 0

PURTON (Wilts.).—For the erection of mixed school at Purton, Stoke. Mr. W. H. Read, architect, Corn Exchange, Swindon:—
Barnes, Purton £550 0 0

SOUTH BENFLEET (Essex).—For additions to school buildings, for Manager's National School. Mr. C. Nicholson, architect, 11, Beaumont-street, Marylebone, London, W.:—

White	£357 5 9	Harrison	£280 0 0
Thorp	320 0 0	Watts	275 15 0
Multon & Wallis	299 10 0	Bayliss	268 10 0
Rons	299 0 0	Iredale, King-street, W.*	247 0 0
Holmes & Berry	295 0 0		
Stibbards	295 0 0		

* Accepted provisionally.

SOUTHEND.—For sewering, levelling, paving, &c., Wilson road, for the Corporation. Mr. C. T. Copley, Borough Surveyor, Clarence-road, Southend:—

Fry Bros.	£639 18 6	E. Iles	£517 0 0
Wimpey & Co.	637 10 9	W. Buxton	509 9 0
Benstead & Lake	611 9 0	J. Moran & Sons	465 0 0
W. Griffiths	524 12 0		

SOUTHWOLD.—For erecting residence, Southwold, for Miss Middleton. Mr. John S. Corder, architect, Ipswich:—

Chilvers	£1,829	Brown, Braintree*	£1,795

* Accepted subject to deductions.

SUDBURY.—Accepted for extension to schools, Sudbury, Suffolk, for Sudbury School Board. Mr. John S. Corder, architect, Ipswich:—
Wanford, Sudbury £1,158 0 0

TATTINGSTONE (Suffolk).—Accepted for various works at Tattingstone-place, Suffolk, for Mr. R. O'Kerrisin. Mr. John S. Corder, architect, Ipswich:—

Lavatories and Closets.
Catchpole, Ipswich £204 0 0

Alterations to Cottage.
Catchpole, Ipswich £237 0 0

WIMBLEDON.—For the erection of Catholic schools, Wimbledon, for the Very Rev. R. F. Clarke. Mr. F. A Walters, F.S.A, architect. Quantities by Mr. J. B. Lofting:—

		Tar-pavement.
Parsons & Townsend	£3,815 11 0	£160 6 0
Stimpson & Co.	3,680 0 0	172 0 0
Goddard & Son	3,663 0 0	153 0 0
Bulled & Co.	3,647 0 0	185 0 0
Lawdon & Son	3,630 0 0	155 0 0
Smith & Son	3,584 0 0	147 0 0
Longley & Co.	3,493 0 0	165 0 0
F. G. Minter, Westminster	3,400 0 0	157 0 0

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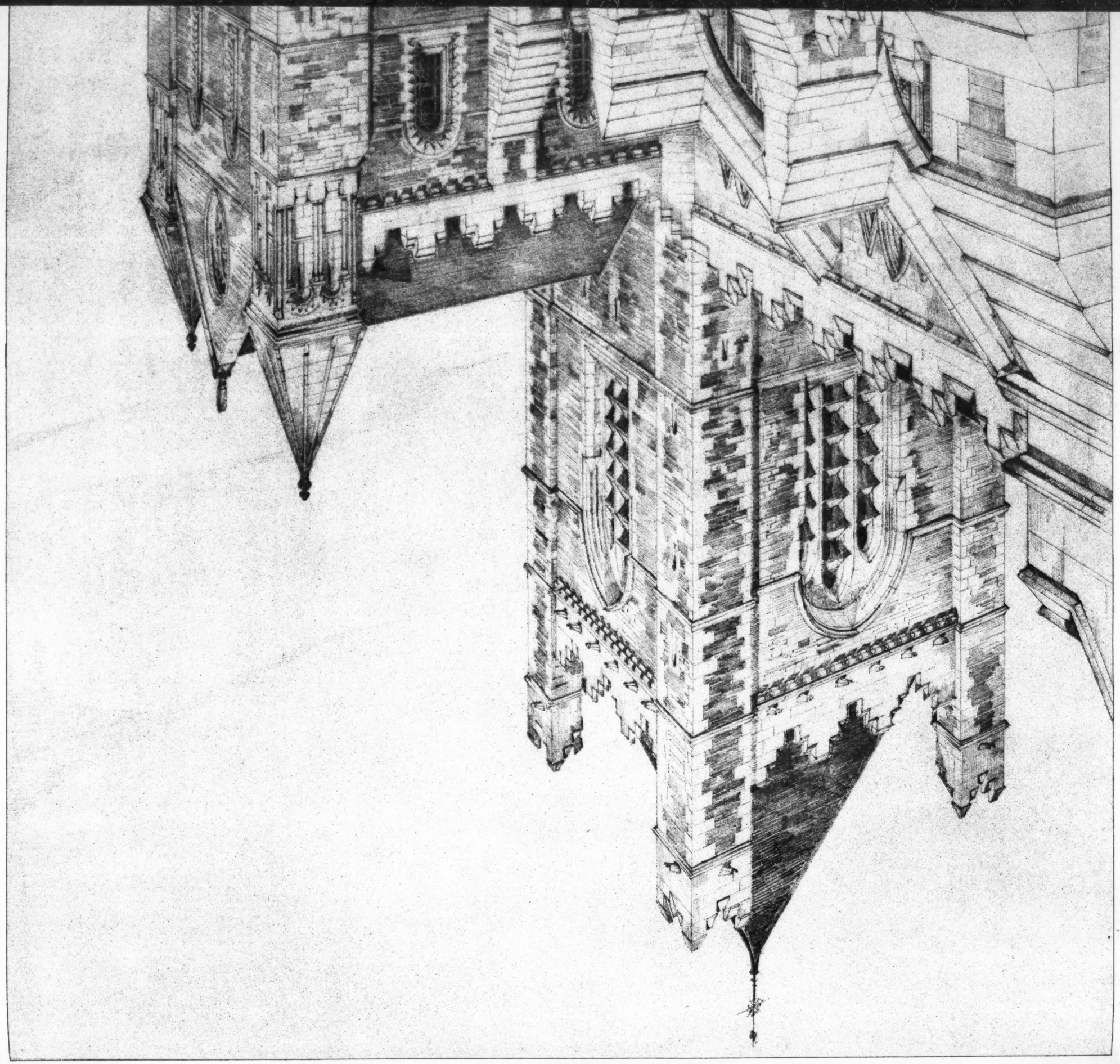
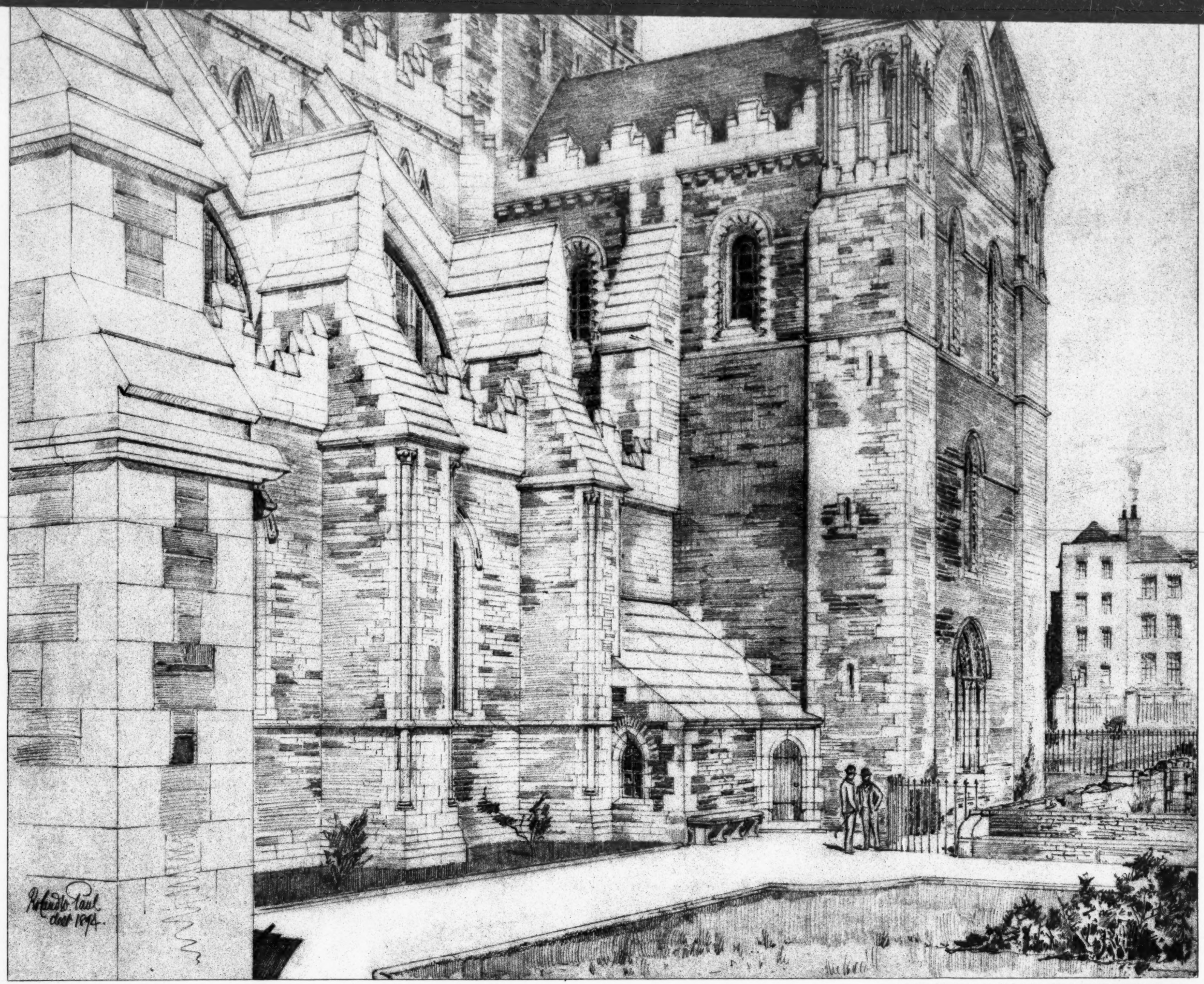


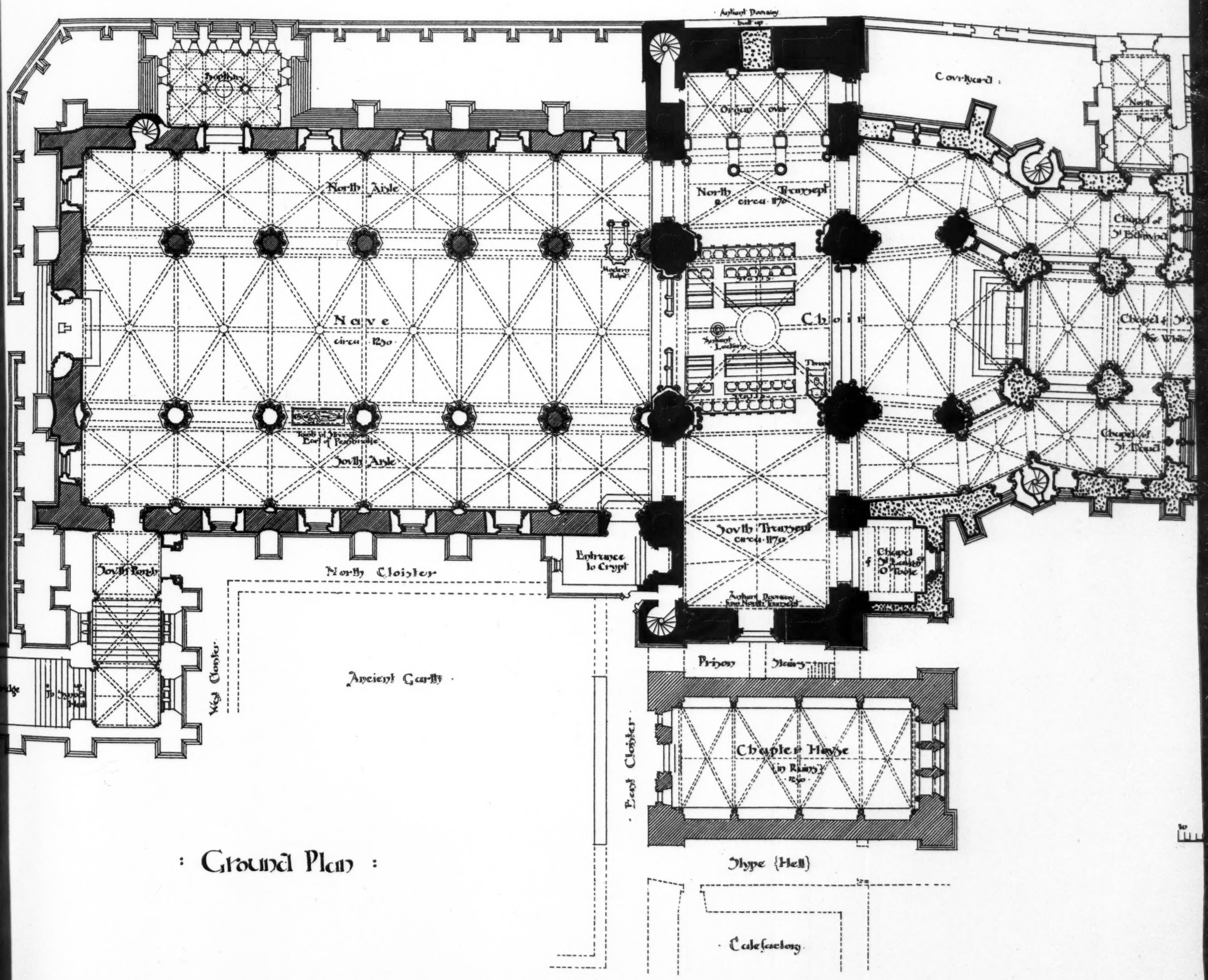


INK-PHOTO. SPRAGUE & Co 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

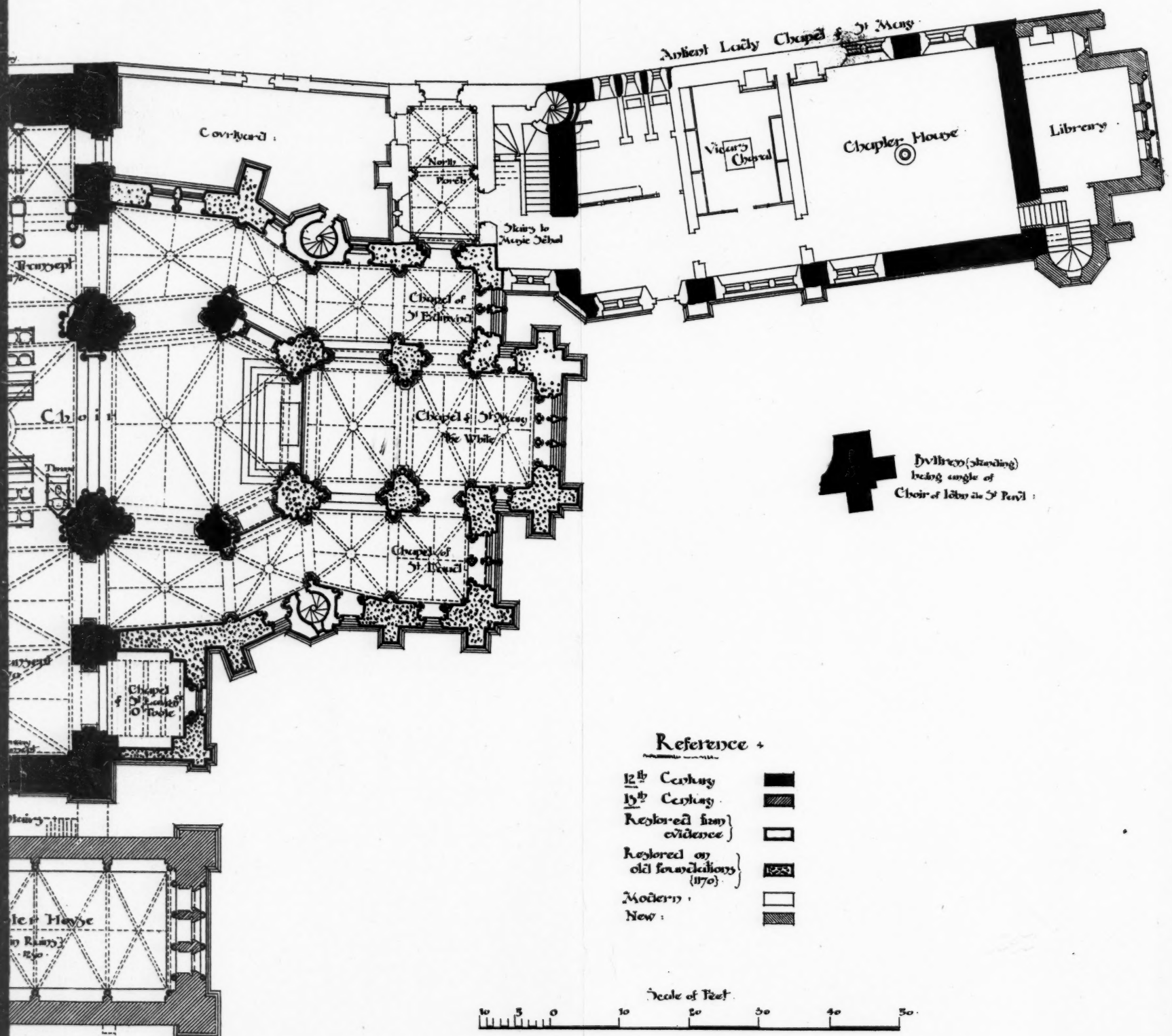
ANCIENT CATHEDRALS OF IRELAND.—Drawn by Mr. Roland W. Paul.

No. 2. CHRIST-CHURCH: FROM THE SOUTH-WEST.

Christ Church of The Holy Trinity Dublin



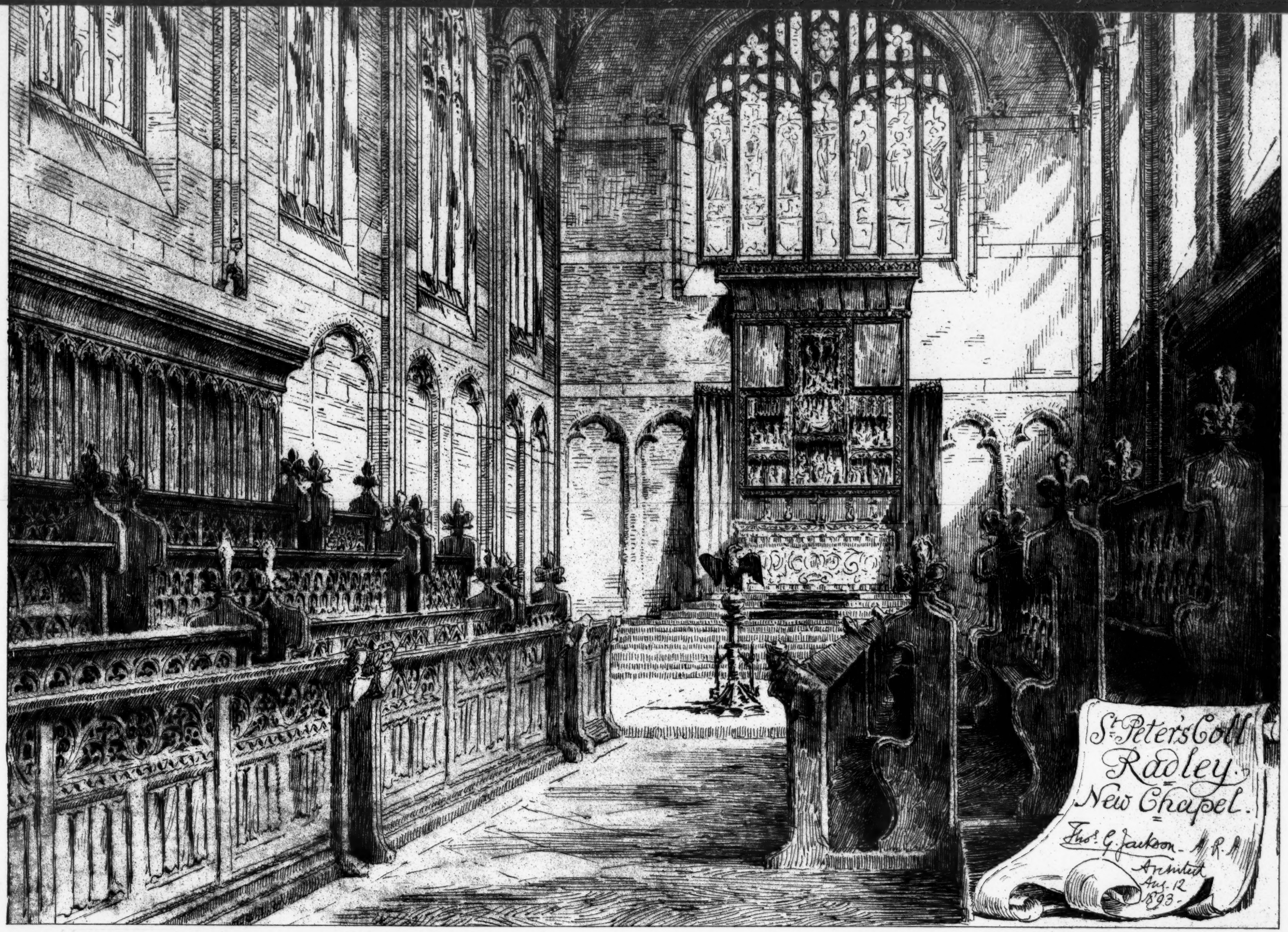
: Ground Plan :



4 Pulpitum (standing) being angle of Choir of Abbey the St Paul :

Fred. G. Hicks.
Delt. 1894.
Chiefly from information kindly supplied by Thomas Drew Esq. R.H.A. Diocesan Architect.

PHOTO-LITHO. SPRAGUE & Co 4 & 5 EAST HARDING STREET FETTER LANE. E.C.



INK-PHOTO. SPRAGUE & Co 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

Royal Academy Exhibition, 1894.

:SMALL: COUNTRY: HOUSES:

At Northwood: Harrow: Stanmore: etc.

Premises Waltham-Cross
for Messrs King and Scarborough

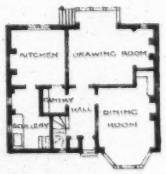
House 'Highfield' Harrow
for Lieut-Colonel Byne

House 'Bowls' Cæsar-S
for Sydney Lea

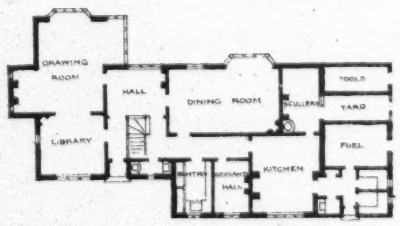
Stablings: Oakhurst 'Mount Park':
for Samuel Gardner Esq^re

House: St Keverne: Harrow:
for Arthur. J. Hill: Esq^re

An Artist's House
"The Haven" Harrow-on-the-Hill
for H. Thornhill Timmins Esq^re



Oakgrove Harrow
for A^d Hildesheim Esq^re



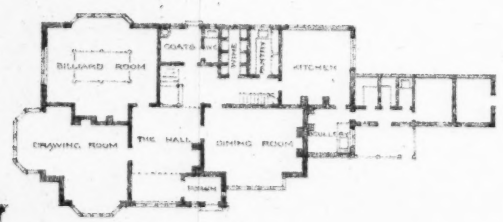
Plan of St Keverne

SMALL COUNTRY HOUSES.—Mr. Arnold Mitchell, A.R.I.B.A., Architect

Royal Academy Exhibition, 1894.

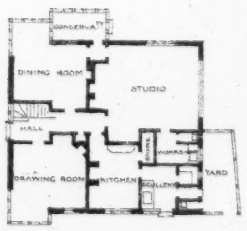
House 'Lightfield' Harrow
for Lieut-Colonel Bize

House 'Bowls' Great Stanmore
for Sydney Lea-Smith Esq^re



...st 'Mount Park'
for Samuel Gardner Esq^re

House: St Keverne: Harrow:
for Arthur J. Hill: Esq^re



An Artist's House
'Sundial Cottage'
Northwood: for Walter West: Esq^re

Arnold Mitchell
Architect
16 Finsbury Circus E.C.
March 1894.

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HOUSES.—Mr. Arnold Mitchell, A.R.I.B.A., Architect